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UK METEOROLOGICAL OFFICE GLOBAL DATA MONITORING REPORT

August, 93

Central Forecasting Division
Meteorological Office
London Rd
Bracknell
Berkshire
RG12 2SZ

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CONTENTS

1. Introduction

2. Global Data Monitoring Statistics

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

Mr A Radford
Observation Processing Manager
Central Forecasting Division
Meteorological Office
London Road
Bracknell
Berkshire
United Kingdom
RG12 2SZ

2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIBU observations received per day thoughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12 UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Aircraft observations

TABLE 3 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of >60 m s^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference > 60 m s^{-1} have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Satellite Observations

Figures 8-22 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
8	Availability/average daily number	701-1000
9	Vector mean wind (observed)	701-1000
10	Observation-background vector wind difference	701-1000
11	Mean observation-background speed differences	701-1000
12	RMS observation-background vector difference	701-1000
13	Availability/average daily number	401-700
14	Vector mean wind (observed)	401-700
15	Observation-background vector wind difference	401-700
16	Mean observation-background speed differences	401-700
17	RMS observation-background vector difference	401-700
18	Availability/average daily number	101-400
19	Vector mean wind (observed)	101-400
20	Observation-background vector wind difference	101-400
21	Mean observation-background speed differences	101-400
22	RMS observation-background vector difference	101-400

Figures 23-25 show satellite mean observation-background temperature differences for NOAA-11 soundings at 500 km resolution and figures 26-28 show the same statistics for NOAA-12. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

Figure	Layer (hPa)
23/26	850-1000
24/27	100-300
25/28	30-50

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH:August, 93

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for ships, fixed buoys and platforms.

Standard of comparison :Background field from Bracknell global model.

Observation times :00, 06, 12, 18 UTC

Elements monitored :Mean sea level pressure (hPa).
:Wind speed (m s^{-1}).
:Wind direction (Degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT :15 hPa (pressure)
:25 m s^{-1} (vector wind)

SELECTION CRITERIA :NOBS $\geq$ 20 ,and one or more of the following:

1.|bias| $\geq$ 4 hPa (pressure),
$\geq$ 5 m s^{-1} (wind speed)
$\geq$ 30 degrees (direction).

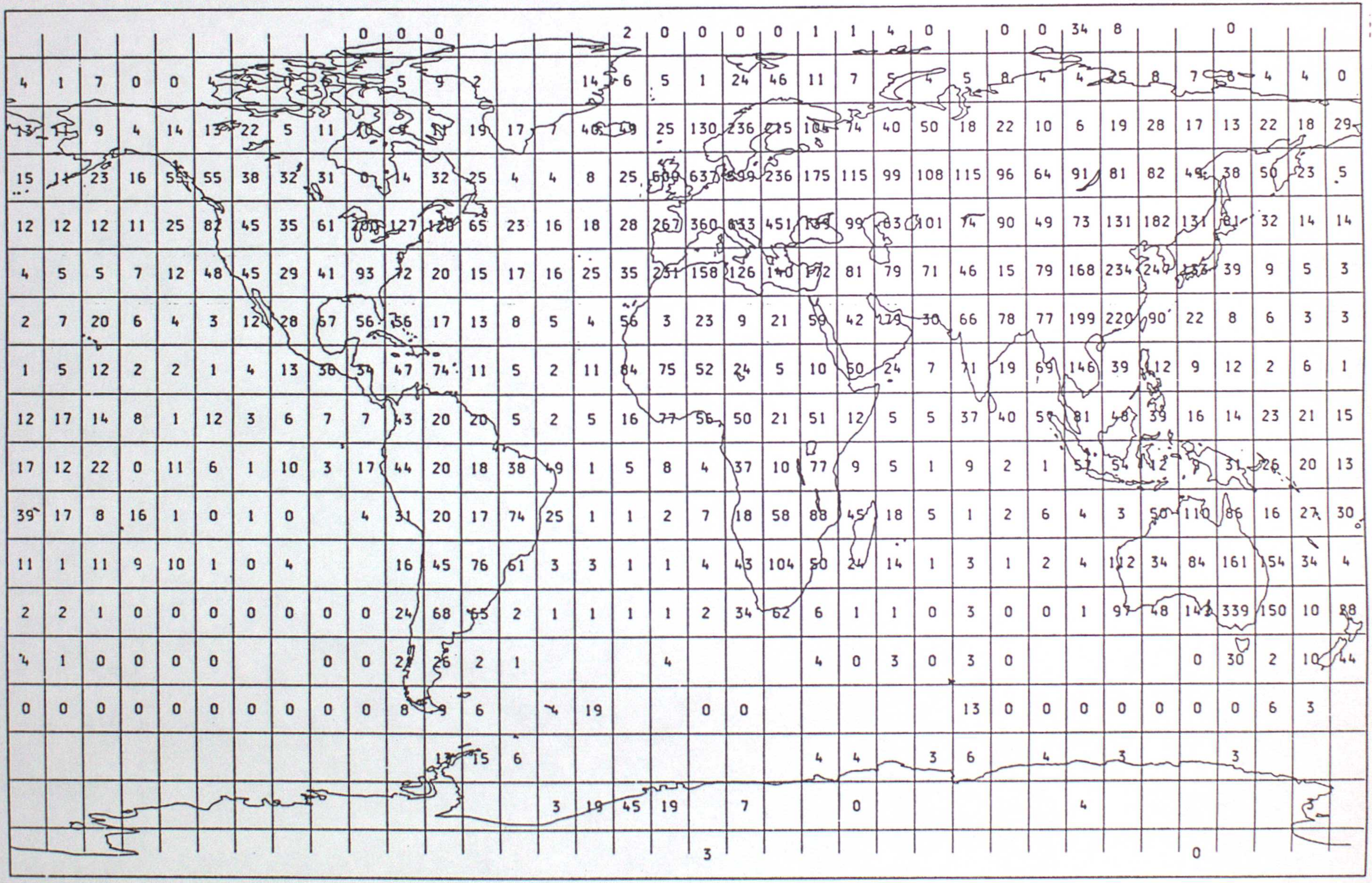
2.SD $\geq$ 6 hPa (pressure)
$\geq$ 80 degrees (direction).

3.PGE $\geq$ 25.

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA-LEVEL PRESSURE									
CG2844	ALL	MSLP	SUR	28	0	0	1.5	4.0	4.2
CG3126	ALL	MSLP	SUR	27	0	0	1.7	-4.0	4.3
CNJB	ALL	MSLP	SUR	23	0	0	1.5	-9.3	9.4
C6BT8	ALL	MSLP	SUR	36	0	0	1.0	4.5	4.7
C6LK7	ALL	MSLP	SUR	32	0	0	2.3	-5.6	6.1
DMZL	ALL	MSLP	SUR	80	0	0	2.8	-6.4	7.0
ELFN7	ALL	MSLP	SUR	38	0	0	2.2	4.3	4.8
ESCA	ALL	MSLP	SUR	43	0	0	1.1	10.7	10.7
LAFB4	ALL	MSLP	SUR	28	0	0	1.4	6.1	6.3
NFMK	ALL	MSLP	SUR	40	0	0	0.7	4.5	4.5
NRUN	ALL	MSLP	SUR	33	1	3	6.5	-2.8	7.1
OVRE2	ALL	MSLP	SUR	23	0	0	1.1	5.5	5.6
PFOH	ALL	MSLP	SUR	35	0	0	2.0	-4.1	4.5
UFKA	ALL	MSLP	SUR	30	0	0	1.4	-6.2	6.4
UHUN	ALL	MSLP	SUR	33	0	0	1.7	4.6	4.9
UJKG	ALL	MSLP	SUR	34	9	26	0.9	-1.4	1.7
UOVE	ALL	MSLP	SUR	23	19	83	0.8	14.4	14.4
UQRA	ALL	MSLP	SUR	20	0	0	2.9	7.6	8.2
UUJV	ALL	MSLP	SUR	25	2	8	1.7	-6.8	7.0
UWVZ	ALL	MSLP	SUR	37	0	0	1.4	5.3	5.5
VC6749	ALL	MSLP	SUR	24	0	0	1.8	-5.8	6.0
VVGC	ALL	MSLP	SUR	20	0	0	2.0	4.7	5.1
WCZB	ALL	MSLP	SUR	37	5	14	1.7	7.5	7.7
WZE4928	ALL	MSLP	SUR	51	50	98	0.0	-4.5	4.5
ZCAM9	ALL	MSLP	SUR	48	0	0	1.7	6.6	6.8
ZSBK	ALL	MSLP	SUR	23	5	22	2.8	-8.0	8.5
ZTFM	ALL	MSLP	SUR	20	0	0	2.0	-5.4	5.7
ZTHN	ALL	MSLP	SUR	20	0	0	2.6	-4.2	5.0
ZTHP	ALL	MSLP	SUR	21	0	0	1.4	-4.3	4.5
3EIM3	ALL	MSLP	SUR	21	0	0	1.3	-5.0	5.1
63105	ALL	MSLP	SUR	83	0	0	0.9	-4.1	4.2
WIND SPEED									
FNQM	ALL	SPEED	SUR	38	1	3	6.6	7.1	9.7
VPGM	ALL	SPEED	SUR	34	0	0	4.0	5.1	6.5
VRIZ	ALL	SPEED	SUR	29	4	14	6.8	14.3	15.8
3EIM3	ALL	SPEED	SUR	20	0	0	2.1	5.6	6.0
WIND DIRECTION									
CGCC	ALL	DIRN.	SUR	21	0	0	50.2	-37.1	62.4
C6JY6	ALL	DIRN.	SUR	26	0	0	30.7	30.6	43.3
DCG2959D	ALL	DIRN.	SUR	26	0	0	86.1	3.8	86.2
LAOO4	ALL	DIRN.	SUR	26	0	0	40.7	-37.6	55.4
3EFY7	ALL	DIRN.	SUR	25	0	0	64.1	31.3	71.3
41002	ALL	DIRN.	SUR	27	0	0	40.9	-30.9	51.3

AVAILABILITY - SHIP/SYNOP - AUGUST 1993
MAIN HOURS ONLY
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 18999

FIGURE 1



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12	12	12	11	25	82	45	35	61	200	127	120	65	23	16	18	28	267	360	633	451	[illegible]	99	83	101	74	90	49	73	131	182	131	81	32	14	14
4	5	5	7	12	48	45	29	41	93	72	20	15	17	16	25	35	231	158	126	140	172	81	79	71	46	15	79	168	234	240	[illegible]	39	9	5	3
2	7	20	6	4	3	12	28	67	56	56	17	13	8	5	4	56	3	23	9	21	59	42	[illegible]	30	66	78	77	199	220	90	22	8	6	3	3
1	5	12	2	2	1	4	13	38	34	47	74	11	5	2	11	84	75	52	24	5	10	50	24	7	71	19	69	146	39	112	9	12	2	6	1
12	17	14	8	1	12	3	6	7	7	43	20	20	5	2	5	16	77	56	50	21	51	12	5	5	37	40	[illegible]	81	48	39	16	14	23	21	15
17	12	22	0	11	6	1	10	3	17	44	20	18	38	49	1	5	8	4	37	10	77	9	5	1	9	2	1	57	54	12	9	31	26	20	13
39	17	8	16	1	0	1	0		4	31	20	17	74	25	1	1	2	7	18	58	88	45	18	5	1	2	6	4	3	50	110	86	16	27	30
11	1	11	9	10	1	0	4			16	45	76	61	3	3	1	1	4	43	104	50	24	14	1	3	1	2	4	112	34	84	161	154	34	4
2	2	1	0	0	0	0	0	0	0	24	68	65	2	1	1	1	1	2	34	62	6	1	1	0	3	0	0	1	97	48	142	339	150	10	88
4	1	0	0	0	0			0	0	21	26	2	1				4				4	0	3	0	3	0					0	30	2	10	44
0	0	0	0	0	0	0	0	0	0	8	9	6		4	19			0	0						13	0	0	0	0	0	0	0	6	3	
											13	15	6								4	4		3	6		4		3			3			
														3	19	45	19		7			0						4						3	
																		3													0				

TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH:August, 93

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoys.

Standard of comparison :Background field from Bracknell global model.

Position :Average Latitude and Longitude for period.

Observation times :00, 06, 12, 18 UTC

Elements monitored :Mean sea level pressure (hPa)
:Wind speed (m s^{-1}),
:Wind direction (degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT :15 hPa (pressure)
:25 m s^{-1} (vector wind)

SELECTION CRITERIA :NOBS ≥ 20 ,and one or more of the following:

1. |bias| ≥ 4 hPa (pressure).
≥ 5 m s^{-1} (wind speed).
≥ 30 degrees (direction).

2. SD ≥ 6 hPa (pressure).
≥ 80 degrees (direction).

3. PGE ≥ 25.

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA-LEVEL PRESSURE											
63161	77.1	-21.9	ALL	MSLP	SUR	285	285	100	0.0	0.0	0.0
71003	-79.0	-28.0	ALL	MSLP	SUR	529	529	100	0.0	0.0	0.0
74002	-72.1	-2.5	ALL	MSLP	SUR	475	118	25	2.6	-10.5	10.8
WIND SPEED											
44513	57.0	-42.8	ALL	SPEED	SUR	180	0	0	2.1	-5.1	5.5
56513	-19.1	86.6	ALL	SPEED	SUR	186	0	0	1.8	-8.2	8.4
WIND DIRECTION											
43001	8.0	-110.0	ALL	DIRN.	SUR	57	0	0	83.9	34.7	90.8
44513	57.0	-42.8	ALL	DIRN.	SUR	155	0	0	146.3	-9.4	146.6
51309	8.0	-170.0	ALL	DIRN.	SUR	41	0	0	69.8	-33.4	77.4
55589	-23.2	161.2	ALL	DIRN.	SUR	204	0	0	15.8	-65.3	67.2
56513	-19.1	86.6	ALL	DIRN.	SUR	186	0	0	55.8	-81.9	99.1

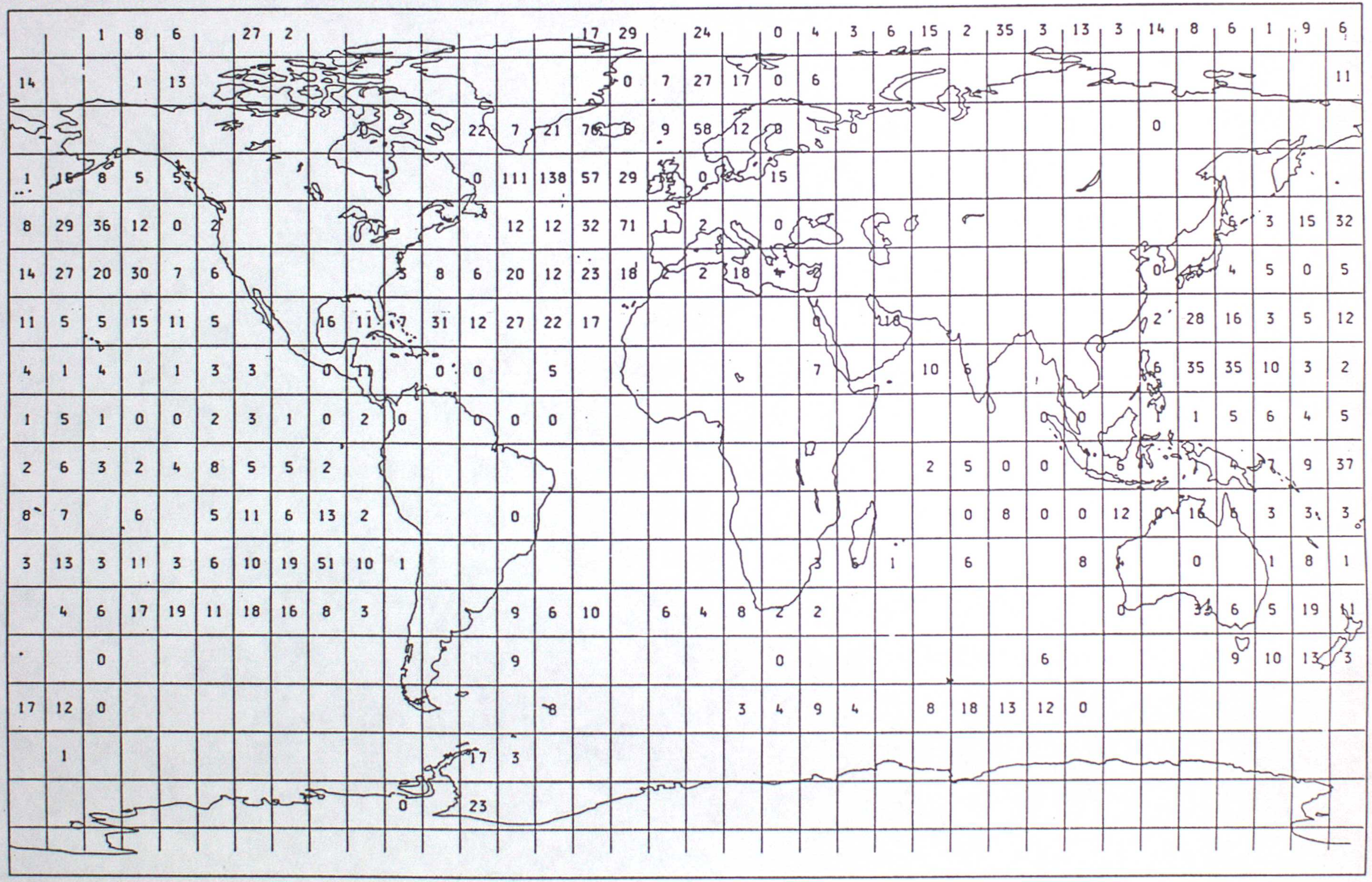
AVAILABILITY - DRIBU - AUGUST 1993

FIGURE 2

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 2715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1 16 8 5 5 0 111 138 57 29 0 15
8 29 36 12 0 2 12 12 32 71 1 2 0 6 3 15 32
14 27 20 30 7 6 5 8 6 20 12 23 18 2 2 18 0 4 5 0 5
11 5 5 15 11 5 16 11 7 31 12 27 22 17 0 18 2 28 16 3 5 12
4 1 4 1 1 3 3 0 1 0 0 5 7 10 6 6 35 35 10 3 2
1 5 1 0 0 2 3 1 0 2 0 0 0 0 0 0 1 1 5 6 4 5
2 6 3 2 4 8 5 5 2 2 5 0 0 6 7 9 37
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3 13 3 11 3 6 10 19 51 10 1 3 6 1 6 8 0 1 8 1
4 6 17 19 11 18 16 8 3 9 6 10 6 4 8 2 2 0 33 6 5 19 11
0 9 0 6 9 10 13 3
17 12 0 8 3 4 9 4 8 18 13 12 0
1 17 3
0 23

TABLE 3

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:August, 93

Monitoring procedures:
Period :One calendar month.
Data monitored :Statistics for each airline carrier.
Area monitored :90°N - 90°S, 180°W - 180°E.
Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :70.0 - 500.0 hPa

Elements monitored :TEMP in °C ; WIND in $m\ s^{-1}$

Parameters monitored
:N REP. :Number of observations received excluding duplicates.
:PG :Percentage of observations with gross errors.
:PR :Percentage of observations rejected by quality control.
:PC :Percentage of observations with calm winds.
:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS :10.0 °C ; 60 $m\ s^{-1}$ Vector Wind

SELECTION CRITERIA :N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	3686	1	13	1.6	0.1	3673	0	14	1	7.6	1.6
AAN	216	0	0	1.5	-0.3	204	0	2	0	7.7	0.6
AAR	1610	1	14	1.7	-0.4	1593	0	14	1	8.0	1.8
ACA	1026	0	2	2.2	0.0	1055	0	2	1	7.4	1.4
ACI	84	1	1	1.5	0.7	84	0	0	0	7.0	1.9
ACU	61	2	3	1.5	-0.8	61	0	3	0	12.0	2.5
AEA	270	2	4	1.8	-0.1	264	0	4	0	8.2	1.7
AEL	354	1	3	1.7	0.1	360	0	4	0	8.7	1.7
AFL	207	9	18	4.2	2.3	211	0	13	1	14.5	0.9
AFR	938	1	6	1.7	0.2	944	0	8	1	8.1	1.8
AMT	271	0	23	2.2	-0.3	296	0	22	1	7.3	1.1
AMX	509	1	2	1.7	0.0	513	0	4	0	8.5	1.0
ANA	861	1	15	1.8	0.1	850	0	15	0	8.0	1.9
ANZ	3582	1	7	1.9	0.0	3552	0	8	1	8.4	1.7
AOM	428	1	2	1.4	0.5	433	0	3	0	7.3	2.4
APW	29	3	3	2.9	0.6	28	0	18	0	16.6	7.7
ARG	148	3	9	2.3	0.2	147	0	8	1	12.6	2.4
ARP	387	1	7	1.7	0.4	385	0	9	2	7.0	1.8
AUA	82	0	1	1.8	-0.9	83	0	1	0	8.5	2.8
AVA	376	1	1	1.6	0.0	377	0	2	1	7.8	2.1
AVN	31	3	10	2.1	0.6	30	0	3	0	10.4	0.7
AZA	568	1	2	1.8	0.1	574	0	2	1	8.9	2.6
BAL	147	1	16	1.7	-0.3	152	0	16	1	7.4	2.3
BAW	915	1	5	2.1	-0.1	919	0	6	1	8.0	2.3
BWA	421	0	1	1.7	1.0	431	0	4	1	8.0	2.7
CAL	2141	1	13	1.7	-0.4	2122	0	14	1	8.2	1.7
CCA	325	2	16	2.6	0.0	324	0	15	0	10.0	1.7
CDN	2104	0	11	2.0	0.1	2102	0	12	1	8.2	1.7
CES	243	1	16	1.8	0.1	245	1	16	0	8.6	2.0
CFG	469	1	3	1.7	-0.7	463	0	3	1	7.9	1.4
CKS	86	0	35	2.7	-0.2	90	0	28	0	12.3	3.4
CKT	37	0	11	1.4	-0.1	39	0	15	0	8.8	1.8
CLX	42	0	0	1.6	-0.4	42	0	2	0	8.3	2.4
CMI	1701	2	18	2.2	0.5	1691	0	20	3	7.9	1.7
CMM	188	1	7	1.6	-0.2	188	0	7	0	8.7	2.5
CNB	92	2	3	1.9	0.1	93	0	3	0	9.9	2.6
COA	2406	1	14	1.8	0.3	2323	0	16	2	7.1	1.1
CPA	354	1	4	1.5	0.0	333	0	4	1	7.2	1.2
CRL	231	1	2	1.6	-0.6	231	0	4	2	8.1	2.1
CSN	48	2	19	2.6	-1.2	48	0	17	0	8.6	0.2
CTM	199	2	30	2.2	-0.8	201	0	31	0	7.3	2.8
CUB	287	1	15	2.4	1.2	288	0	16	0	9.4	1.7
DAE	41	5	10	2.7	-0.8	42	0	7	5	6.4	0.2
DAL	5682	0	15	2.0	0.5	5466	0	16	0	7.6	1.4
DHL	118	2	3	1.9	0.7	120	0	4	0	11.7	1.9
DLH	1950	0	5	2.2	-0.3	1960	0	9	4	7.4	1.7
DOA	130	2	8	1.5	-0.3	132	0	9	0	7.7	1.5
EIA	168	1	8	2.1	0.9	169	0	10	0	10.5	1.6
ELY	111	0	5	1.6	-0.2	113	0	7	0	8.6	1.3
EVA	795	1	15	1.8	-0.9	792	0	17	1	8.5	1.7
FDX	1019	1	9	1.7	0.5	1019	0	10	1	7.5	1.3
FIN	533	1	2	2.1	0.2	530	0	5	2	9.3	2.1
FJI	432	2	2	2.1	1.1	431	0	1	0	9.3	1.9
FKI	27	0	4	3.2	1.6	27	0	4	0	8.6	2.4
GAF	59	2	2	2.1	0.4	58	0	0	0	5.8	0.5
GIA	367	1	6	1.4	0.2	364	0	6	1	7.4	1.7
HAL	1714	0	24	1.9	0.5	1671	0	26	1	8.2	1.6
HLF	155	1	4	1.6	-1.0	155	0	4	1	7.2	1.7
IBE	2767	1	16	1.7	0.0	2741	0	17	0	8.1	1.4

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
ICE	423	0	0	1.9	-0.2	421	0	1	0	8.3	2.0
ICX	36	0	8	2.5	-0.3	36	0	3	0	7.6	3.0
JAA	53	2	4	1.9	0.9	50	0	4	2	7.6	4.1
JAL	7141	0	14	1.6	0.3	7070	0	16	1	7.8	1.7
JAS	135	0	18	1.1	0.3	132	0	20	0	8.5	1.6
JAZ	77	0	25	1.9	1.3	77	0	23	0	6.8	0.4
KAL	4262	1	14	1.8	-0.2	4234	0	15	1	8.1	1.6
KIW	37	3	19	2.8	1.9	36	0	17	0	11.7	3.2
KLM	1645	1	2	1.9	0.2	1668	0	4	1	8.2	2.1
LAN	71	1	6	2.3	-0.1	70	0	11	3	11.8	0.9
LAP	37	0	16	3.4	-0.9	36	3	39	0	24.4	9.1
LCO	48	4	6	1.9	-0.1	46	2	7	0	13.9	2.3
LDA	221	0	14	2.2	-1.5	222	0	16	0	8.6	1.9
LDI	51	0	4	1.6	-1.2	51	0	6	0	9.8	1.9
LIB	117	0	3	1.9	-0.6	116	0	2	0	6.8	2.4
LLB	29	7	10	3.0	1.3	28	0	0	0	10.7	0.6
LOT	466	0	3	2.1	-0.1	464	0	4	0	8.9	1.6
LTU	486	0	5	1.6	0.3	467	0	7	2	7.6	1.9
MAH	106	2	5	2.1	-0.5	109	0	4	0	9.0	0.8
MAS	426	1	15	1.9	0.3	424	0	15	0	9.5	2.0
MDA	116	1	9	2.2	0.7	118	0	9	0	9.5	3.2
MPH	421	0	2	1.9	0.0	423	0	2	0	7.3	1.3
MTQ	126	1	25	1.2	0.4	127	0	25	0	8.4	2.8
NCA	805	0	15	1.7	0.0	802	0	18	1	7.5	1.0
NGA	146	4	5	2.2	0.9	154	0	1	0	10.4	0.6
NWA	12008	1	10	1.9	0.1	11888	0	12	2	8.2	1.6
PAL	1043	1	15	2.0	-0.5	1008	0	18	3	7.8	1.1
PAO	606	1	10	1.8	0.2	600	0	10	1	8.4	1.2
QFA	2821	1	8	1.7	0.3	2771	0	10	1	8.3	1.4
RAF	216	0	1	1.6	-0.3	214	0	3	0	8.3	1.5
RBA	40	0	3	1.5	0.7	40	0	3	0	9.1	1.8
RIA	26	0	4	2.8	2.2	29	0	0	0	10.3	-0.3
RKA	75	3	1	1.4	0.6	77	0	8	1	8.9	1.9
RON	79	0	4	2.4	1.2	79	0	6	5	8.0	1.3
ROY	36	0	0	2.4	-0.8	36	0	3	0	7.8	0.5
RRR	209	6	14	2.2	-0.2	213	0	16	2	9.4	0.9
SAA	213	1	1	1.7	-0.6	210	0	3	1	8.5	2.4
SAS	1836	0	2	2.2	-0.2	1828	0	3	1	7.9	1.4
SAW	65	0	2	2.2	0.2	67	0	1	0	6.8	1.8
SIA	1730	0	12	1.8	-0.2	1707	0	13	1	8.5	2.0
SMB	20	0	10	2.8	1.1	20	0	5	0	8.1	3.8
SOL	89	1	7	1.9	0.4	89	0	7	0	10.1	0.6
SPP	337	1	2	1.7	0.3	323	0	3	1	7.1	1.6
SVA	92	1	3	1.6	-0.2	99	0	2	0	7.4	2.3
SWR	122	1	2	1.9	0.0	120	0	4	3	8.3	1.0
TAP	836	1	3	1.9	-0.1	832	0	4	1	8.8	1.7
TBA	71	1	8	2.9	1.0	70	0	6	0	10.4	4.0
TEJ	46	2	22	1.9	-0.1	46	0	20	0	5.4	1.0
THA	590	1	18	1.6	0.4	587	0	19	1	8.9	1.8
TOW	106	0	2	1.8	0.2	114	0	3	0	8.2	1.1
TRH	75	0	29	1.7	1.5	72	1	33	3	5.2	-0.5
TSC	44	0	16	2.1	-0.2	48	0	17	0	11.1	4.1
TWA	980	1	6	1.9	0.4	980	0	6	0	8.2	1.7
UAL	72154	2	5	1.3	-0.1	72069	0	4	0	6.7	0.8
ULE	322	1	1	2.1	-0.2	321	0	1	0	8.3	2.2
UPS	940	2	25	2.2	-0.7	940	0	25	0	8.2	1.5
VIA	870	1	9	1.6	0.2	866	0	10	1	8.0	2.4
VIR	60	0	0	1.9	-0.5	62	0	0	0	9.9	3.7
VRG	610	3	7	2.2	0.4	601	0	7	0	11.6	3.2

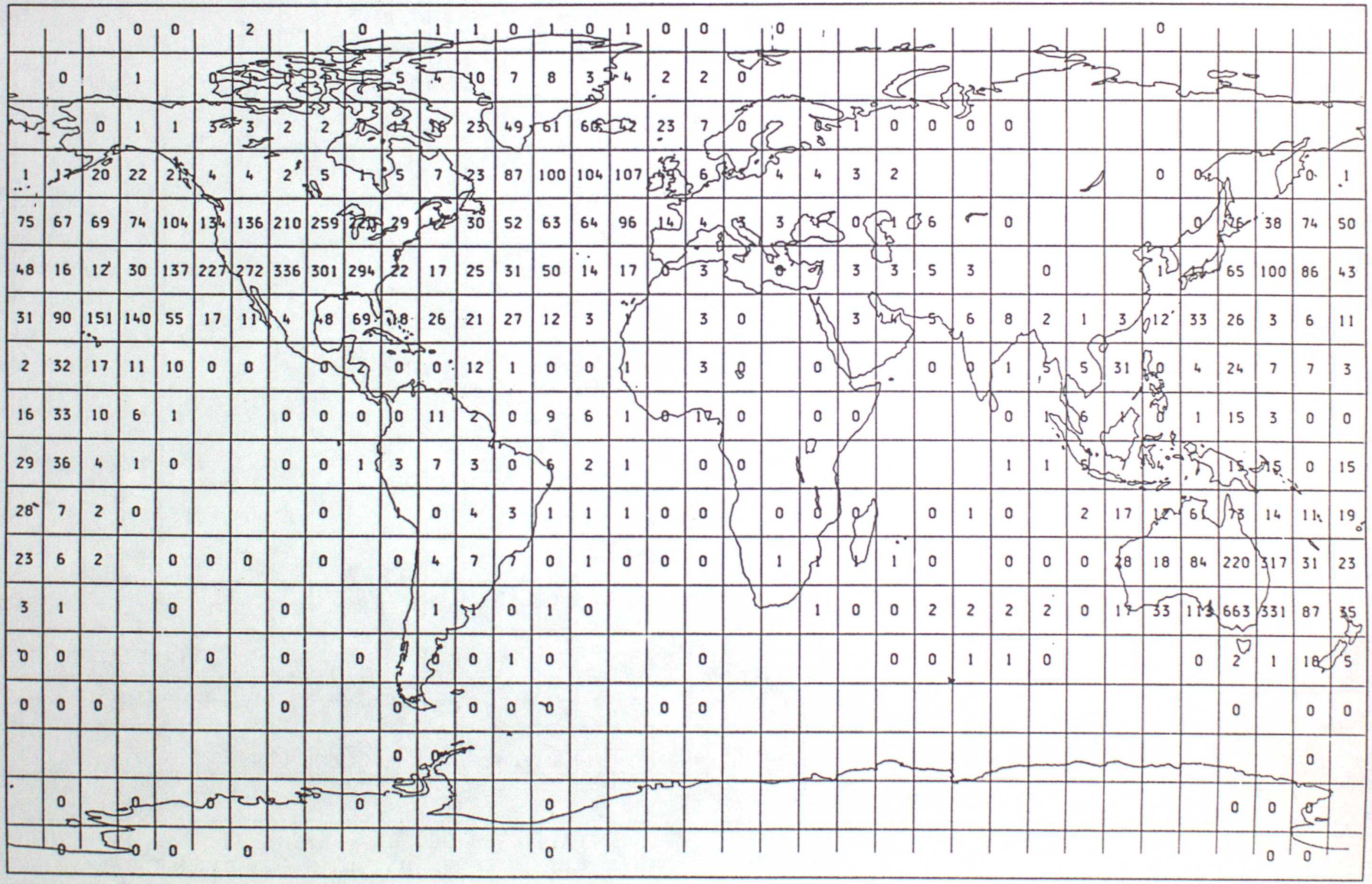
	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
VSP	174	2	18	1.6	0.5	173	0	20	0	10.1	1.0
WOA	87	0	3	1.6	-0.2	88	0	3	0	8.8	3.4
AL	1158	0	1	1.4	0.5	1080	0	1	0	6.3	0.3
AN	41709	0	44	1.5	0.4	41387	0	44	0	7.5	1.8
BA	9070	0	7	1.6	0.7	9066	0	7	0	7.3	1.6
CO	5627	0	38	1.5	0.8	5606	0	38	0	6.1	1.2
DL	4023	2	2	1.5	0.7	4018	0	21	19	11.0	-1.7
KL	3125	0	100	2.2	1.7	3121	0	13	0	6.9	1.6
LH	960	0	16	1.7	0.6	957	0	17	0	6.5	1.6
QF	12468	0	39	1.4	0.5	12468	0	39	0	6.9	1.5
RE	75	1	3	3.4	2.5	59	0	7	2	14.1	-0.5
UA	3996	3	34	1.7	-0.4	3732	0	36	1	8.8	1.7
WA	1040	20	100	1.9	0.2	952	1	100	54	14.8	-8.2
XX	2956	1	100	1.6	0.7	2953	0	100	1	10.6	1.9
M	210	1	22	3.6	2.7	214	0	18	0	7.7	1.5
N	452	5	17	2.4	0.0	452	0	16	1	8.9	1.8

MEAN DAILY COUNT OF AIREPS AND ASDARS   70 -   500 HPA

AUGUST 1993

OBSERVATIONS WITH RMSVW DIFFERENCE > 60 MPS EXCLUDED

FIGURE 3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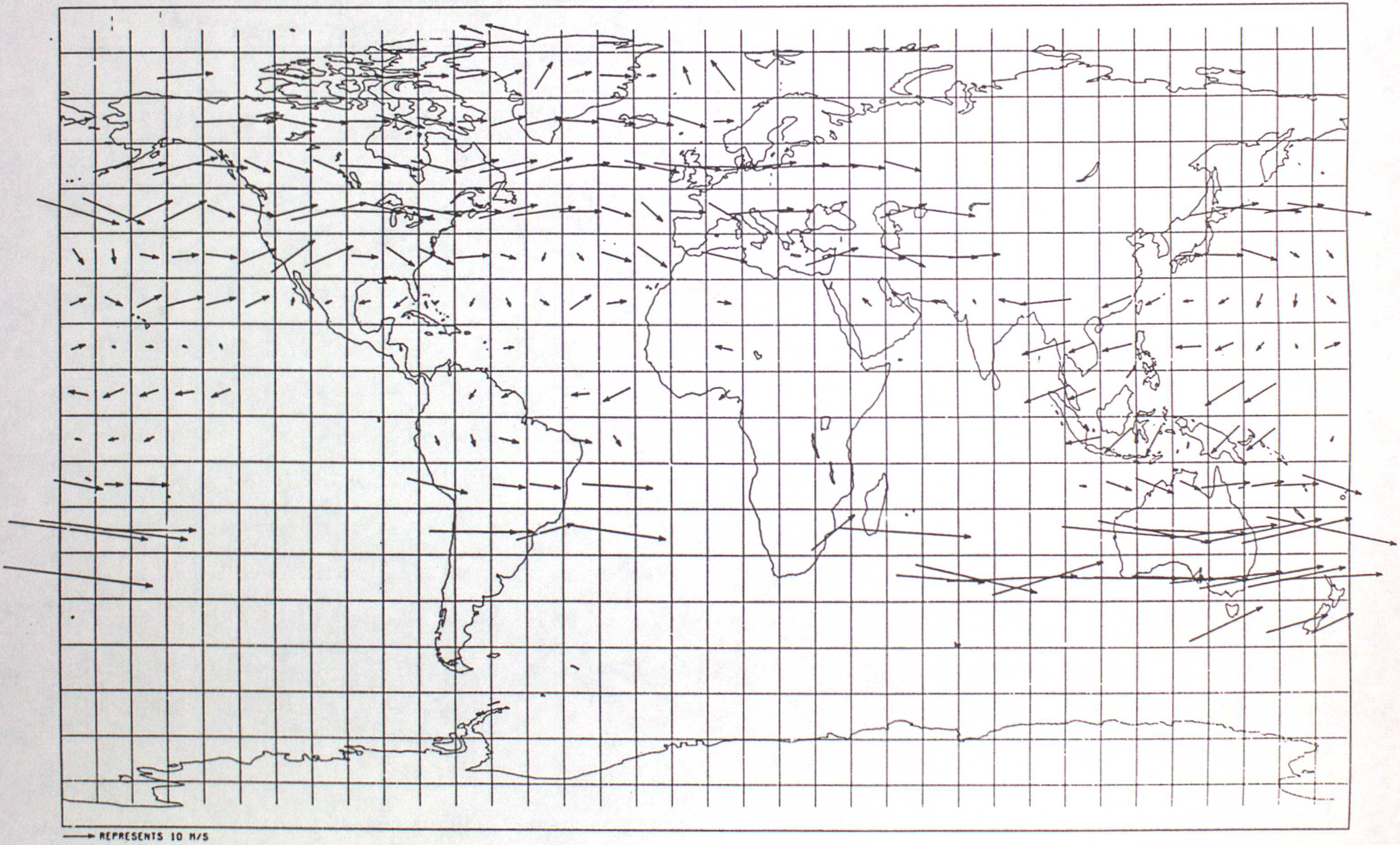
75 67 69 74 104 134 136 210 259 220 29 12 30 52 63 64 96 14 4 3 3 0 1 6 0 0 6 38 74 50
48 16 12 30 137 227 272 336 301 294 22 17 25 31 50 14 17 0 3 3 3 5 3 0 1 65 100 86 43
31 90 151 140 55 17 11 4 48 69 18 26 21 27 12 3 1 3 0 3 4 5 6 8 2 1 3 12 33 26 3 6 11
2 32 17 11 10 0 0 0 2 0 0 12 1 0 0 1 3 0 0 0 0 1 5 5 31 0 4 24 7 7 3
16 33 10 6 1 0 0 0 0 11 2 0 9 6 1 0 17 0 0 0 0 1 6 1 0 1 15 3 0 0
29 36 4 1 0 0 0 1 3 7 3 0 6 2 1 0 0 1 1 5 4 15 15 0 15
28 7 2 0 0 1 0 4 3 1 1 1 0 0 0 0 0 0 1 0 2 17 12 61 73 14 11 19
23 6 2 0 0 0 0 0 4 7 7 0 1 0 0 0 1 1 1 1 0 0 0 0 28 18 84 220 317 31 23
3 1 0 0 1 1 0 1 0 1 0 0 2 2 2 2 0 17 33 113 663 331 87 35
0 0 0 0 0 0 0 1 0 0 0 0 1 1 0 0 2 1 18 5
0 0 0 0 0 0 0 0 0 0 0 0 0
0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0

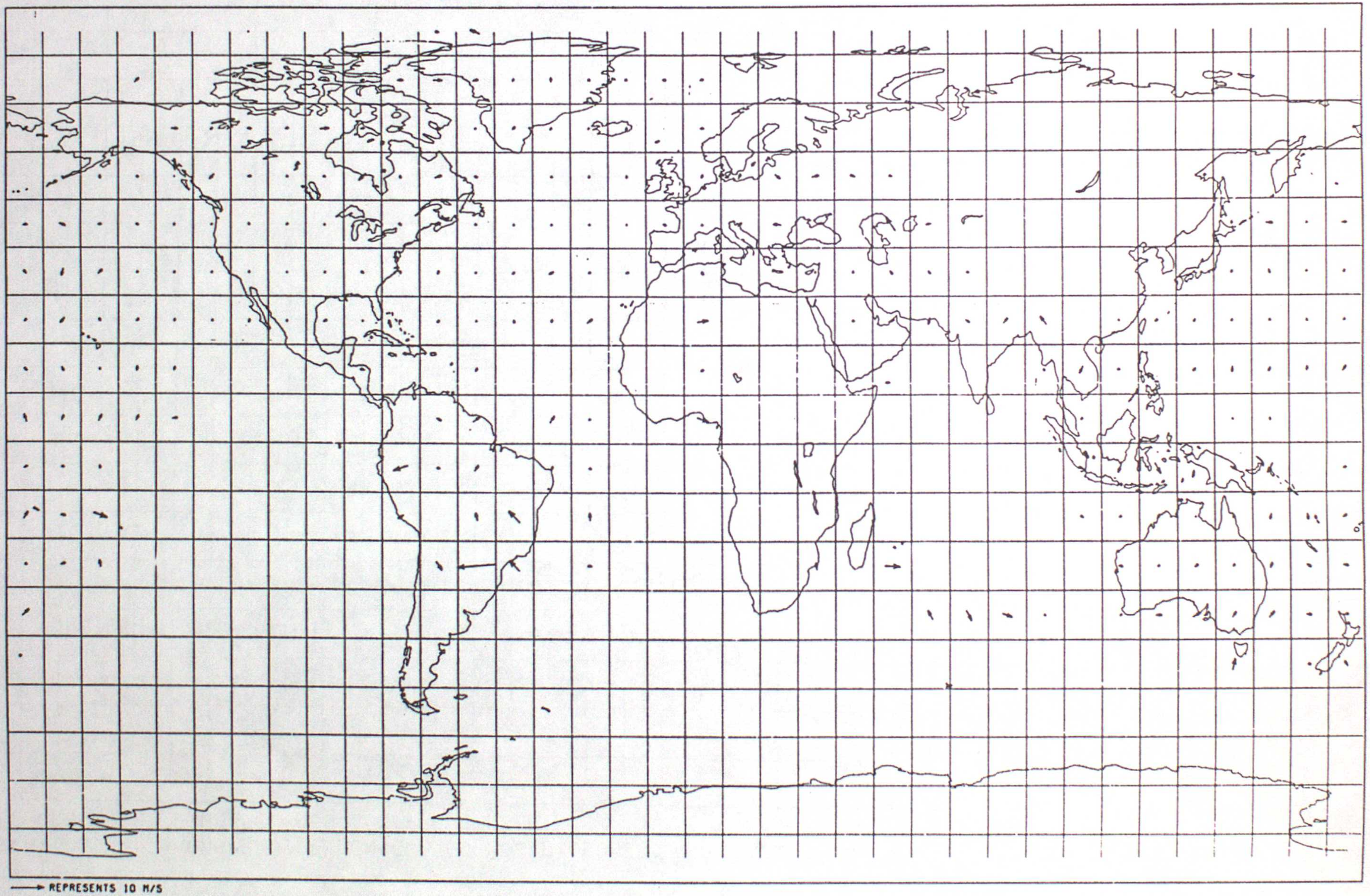
AIREPS & ASDARS MEAN WINDS BETWEEN 70 AND 500 HPA
AUGUST 1993
OBSERVATIONS WITH RMSVW DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

FIGURE 4

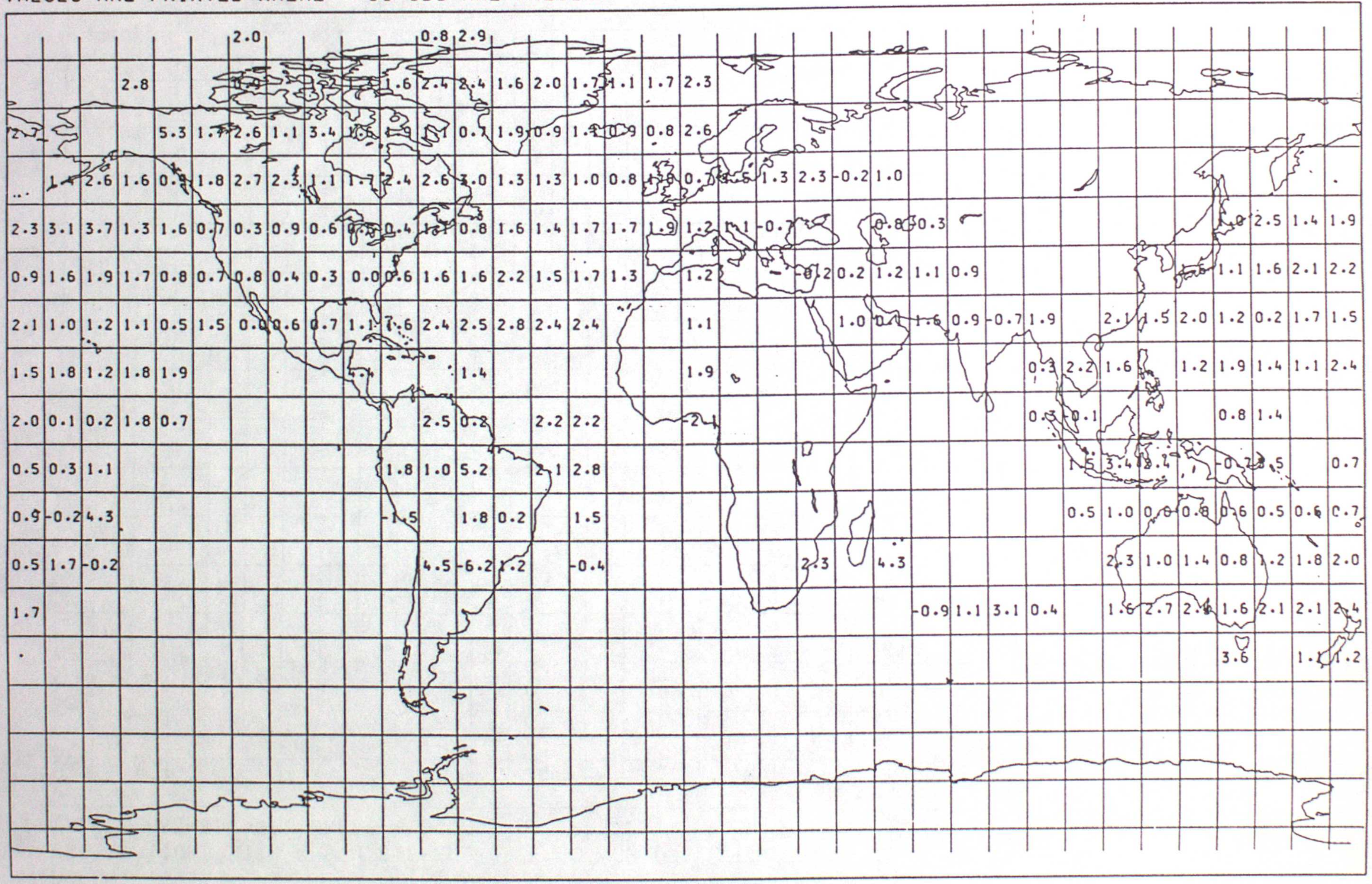


AIREPS & ASDARS MEAN O-B WINDS BETWEEN 70 AND 500 HPA
AUGUST 1993
OBSERVATIONS WITH RMSVW DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

FIGURE 5



AIREPS & ASDARS : MEAN O-B SPEEDS (M/S) BETWEEN 70 AND 500 HPA FIGURE 6
AUGUST 1993
OBSERVATIONS WITH RMSVW DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT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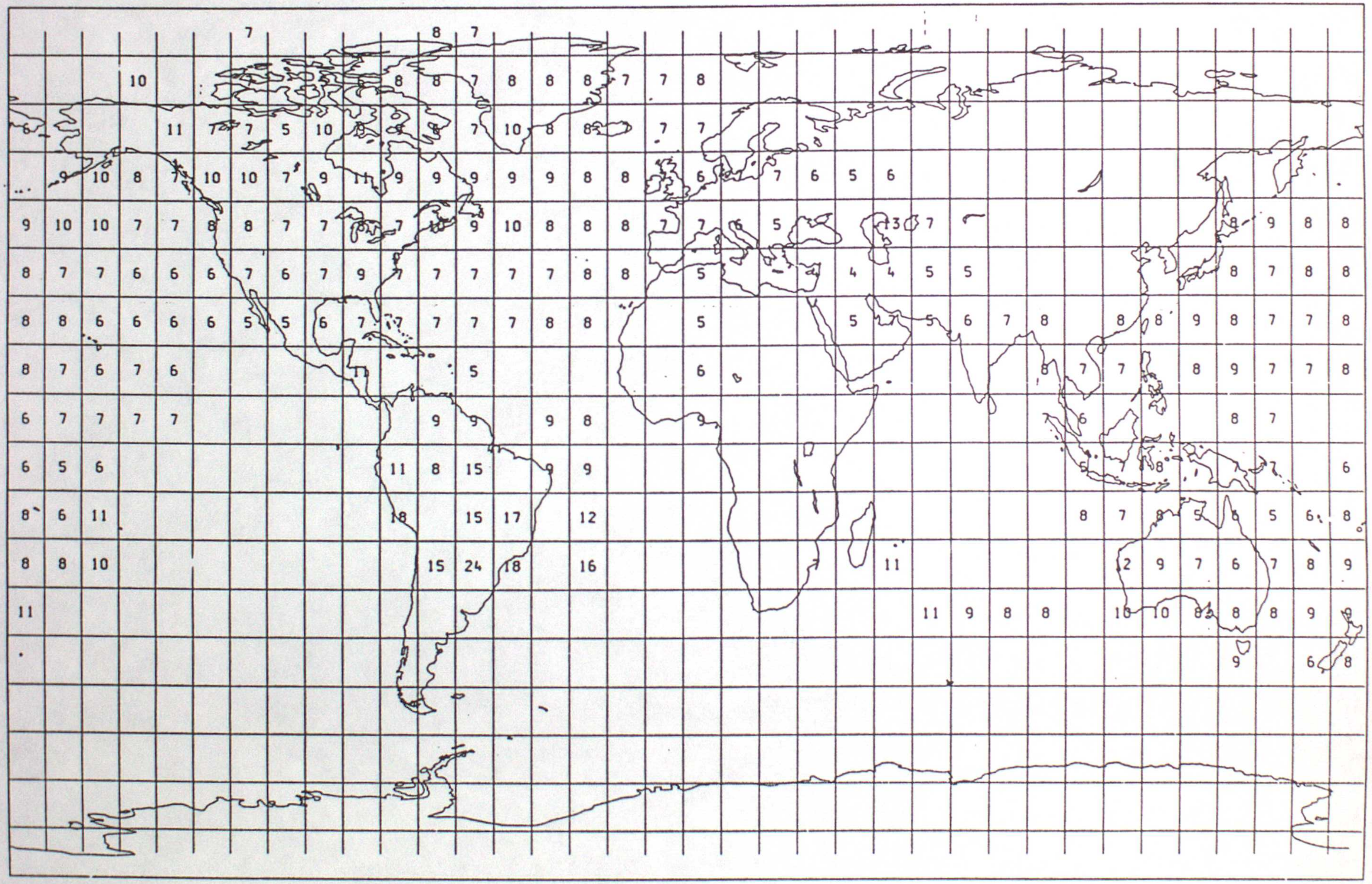
2.8 0.9 1.6 2.4 2.4 1.6 2.0 1.7 1.1 1.7 2.3
2.7 5.3 1.7 2.6 1.1 3.4 1.6 1.9 1.1 0.7 1.9 0.9 1.4 0.9 0.8 2.6
1.4 2.6 1.6 0.9 1.8 2.7 2.3 1.1 1.7 2.4 2.6 3.0 1.3 1.3 1.0 0.8 1.0 0.7 1.5 1.3 2.3 -0.2 1.0
2.3 3.1 3.7 1.3 1.6 0.7 0.3 0.9 0.6 0.5 0.4 1.1 0.8 1.6 1.4 1.7 1.7 1.9 1.2 1.1 -0.7 0.8 0.3 1.0 2.5 1.4 1.9
0.9 1.6 1.9 1.7 0.8 0.7 0.8 0.4 0.3 0.0 0.6 1.6 1.6 2.2 1.5 1.7 1.3 1.2 0.2 0.2 1.2 1.1 0.9 1.6 1.1 1.6 2.1 2.2
2.1 1.0 1.2 1.1 0.5 1.5 0.0 0.6 0.7 1.1 1.6 2.4 2.5 2.8 2.4 2.4 1.1 1.0 0.1 1.6 0.9 -0.7 1.9 2.1 1.5 2.0 1.2 0.2 1.7 1.5
1.5 1.8 1.2 1.8 1.9 1.4 1.4 1.9 0.3 2.2 1.6 1.2 1.9 1.4 1.1 2.4
2.0 0.1 0.2 1.8 0.7 2.5 0.2 2.2 2.2 -2.1 0.3 -0.1 0.8 1.4
0.5 0.3 1.1 1.8 1.0 5.2 2.1 2.8 1.5 3.4 2.4 -0.2 3.5 0.7
0.9 -0.2 4.3 -1.5 1.8 0.2 1.5 0.5 1.0 0.0 0.8 0.6 0.5 0.6 0.7
0.5 1.7 -0.2 4.5 -6.2 1.2 -0.4 2.3 4.3 2.3 1.0 1.4 0.8 1.2 1.8 2.0
1.7 -0.9 1.1 3.1 0.4 1.6 2.7 2.4 1.6 2.1 2.1 2.4
3.6 1.1 1.2

AIREPS & ASDARS : RMS O-B VECTOR (M/S) BETWEEN 70 AND 500 HPA FIGURE 7
AUGUST 1993
OBSERVATIONS WITH RMSVW DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT


7 8 7
10 8 8 7 8 8 8 7 7 8
6 11 7 7 5 10 8 7 10 8 8 7 7
9 10 8 7 10 10 7 9 11 9 9 9 9 9 8 8 6 7 6 5 6
9 10 10 7 7 8 8 7 7 7 9 10 8 8 8 7 7 6 5 13 7 8 9 8 8
8 7 7 6 6 6 7 6 7 9 7 7 7 7 7 8 8 5 4 4 5 5 8 7 8 8
8 8 6 6 6 6 5 5 6 7 7 7 7 7 8 8 5 5 5 6 7 8 8 8 9 8 7 7 8
8 7 6 7 6 11 5 6 8 7 7 8 9 7 7 8
6 7 7 7 7 9 9 9 8 9 7 6 8 7
6 5 6 11 8 15 9 9 5 8 7 6
8 6 11 18 15 17 12 8 7 8 5 6 5 6 8
8 8 10 15 24 18 16 11 12 9 7 6 7 8 9
11 11 9 8 8 10 10 8 8 8 9 9
9 6 8

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH: August, 93

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from GOES, METEOSAT, GMS, INSAT.

Standard of comparison :Background field from Bracknell global model.

Selection Criteria :number of observations > 10.

Data Extracted :Layer:
701 - 1000 hPa
401 - 700 hPa
101 - 400 hPa

:Mean wind

:Mean observation minus background vector wind differences

:Mean observation minus background speed differences

:RMS of observation minus background vector differences

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 8
AUGUST 1993

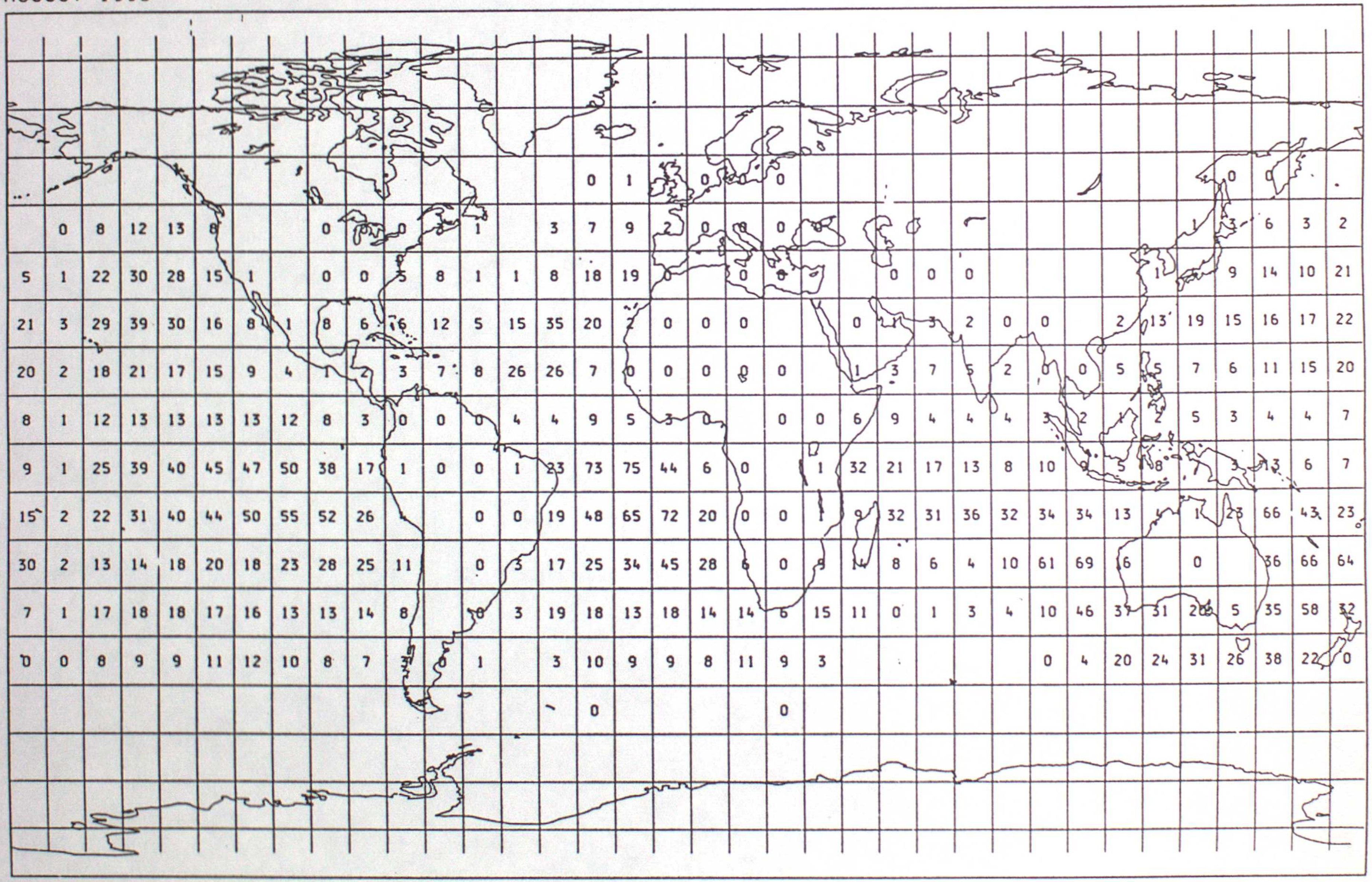
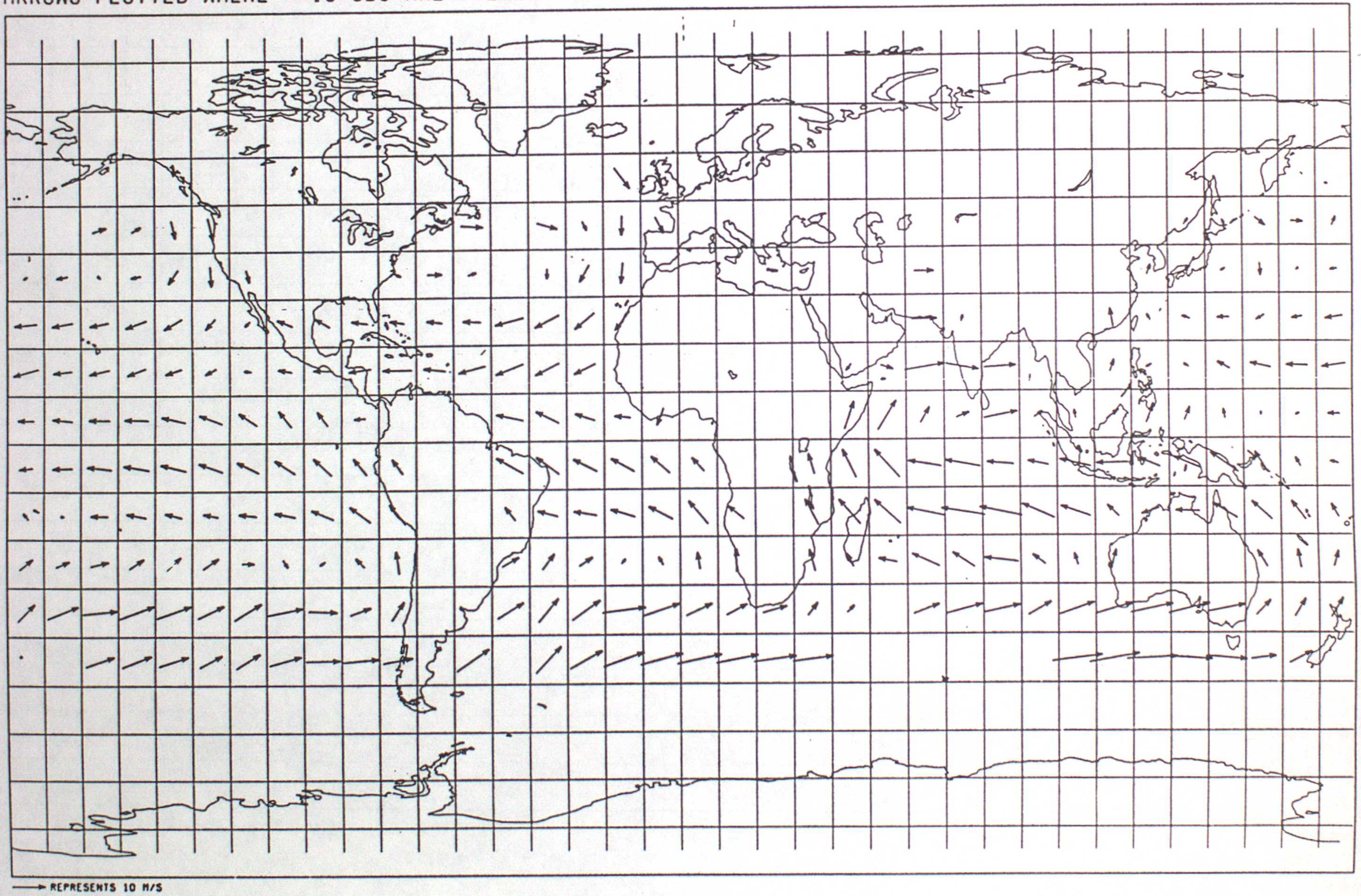

0 1 0 0 0 0 0 .
0 8 12 13 8 0 0 0 3 1 3 7 9 2 0 0 0 0 1 3 6 3 2
5 1 22 30 28 15 1 0 0 5 8 1 1 8 18 19 0 0 0 0 0 0 1 9 14 10 21
21 3 29 39 30 16 8 1 8 6 16 12 5 15 35 20 2 0 0 0 0 1 3 2 0 0 2 13 19 15 16 17 22
20 2 18 21 17 15 9 4 1 2 3 7 8 26 26 7 0 0 0 0 0 1 3 7 5 2 0 0 5 5 7 6 11 15 20
8 1 12 13 13 13 13 12 8 3 0 0 0 4 4 9 5 3 0 0 0 6 9 4 4 4 3 2 1 2 5 3 4 4 7
9 1 25 39 40 45 47 50 38 17 1 0 0 1 23 73 75 44 6 0 1 32 21 17 13 8 10 9 5 8 7 3 13 6 7
15 2 22 31 40 44 50 55 52 26 4 0 0 19 48 65 72 20 0 0 1 9 32 31 36 32 34 34 13 4 1 23 66 43 23
30 2 13 14 18 20 18 23 28 25 11 0 3 17 25 34 45 28 6 0 9 14 8 6 4 10 61 69 16 0 36 66 64
7 1 17 18 18 17 16 13 13 14 8 0 3 19 18 13 18 14 14 6 15 11 0 1 3 4 10 46 37 31 20 5 35 58 32
0 0 8 9 9 11 12 10 8 7 3 0 1 3 10 9 9 8 11 9 3 0 4 20 24 31 26 38 22 0
0 0

FIGURE 9

SATOB VECTOR MEAN WINDS BETWEEN 701-1000 HPA
AUGUST 1993
ALL OBSERVATIONS
ARROWS PLOTTED WHERE > 10 OBS ARE PRESENT


REPRESENTS 10 M/S

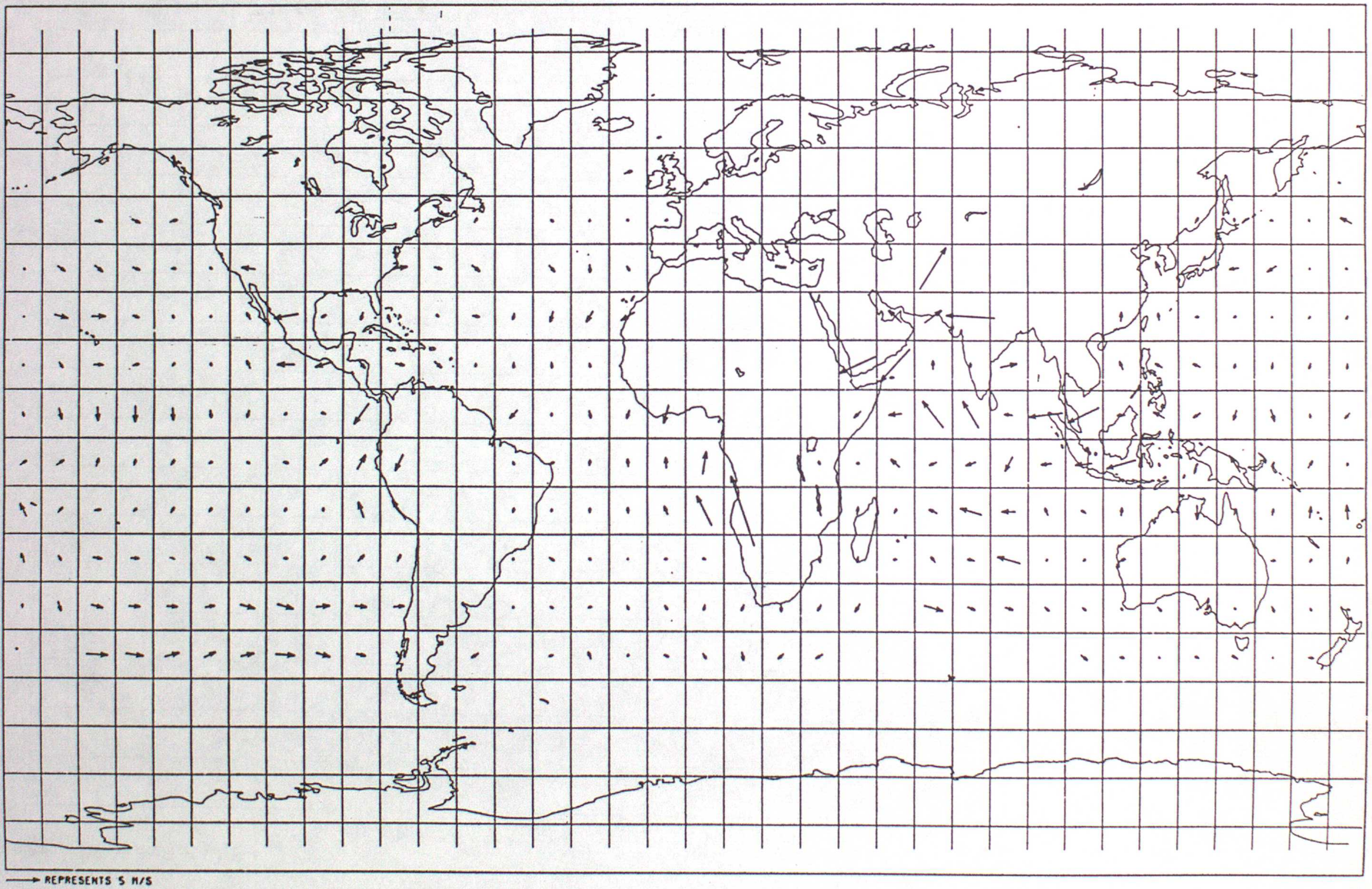
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 701-1000 HPA

AUGUS1 1993

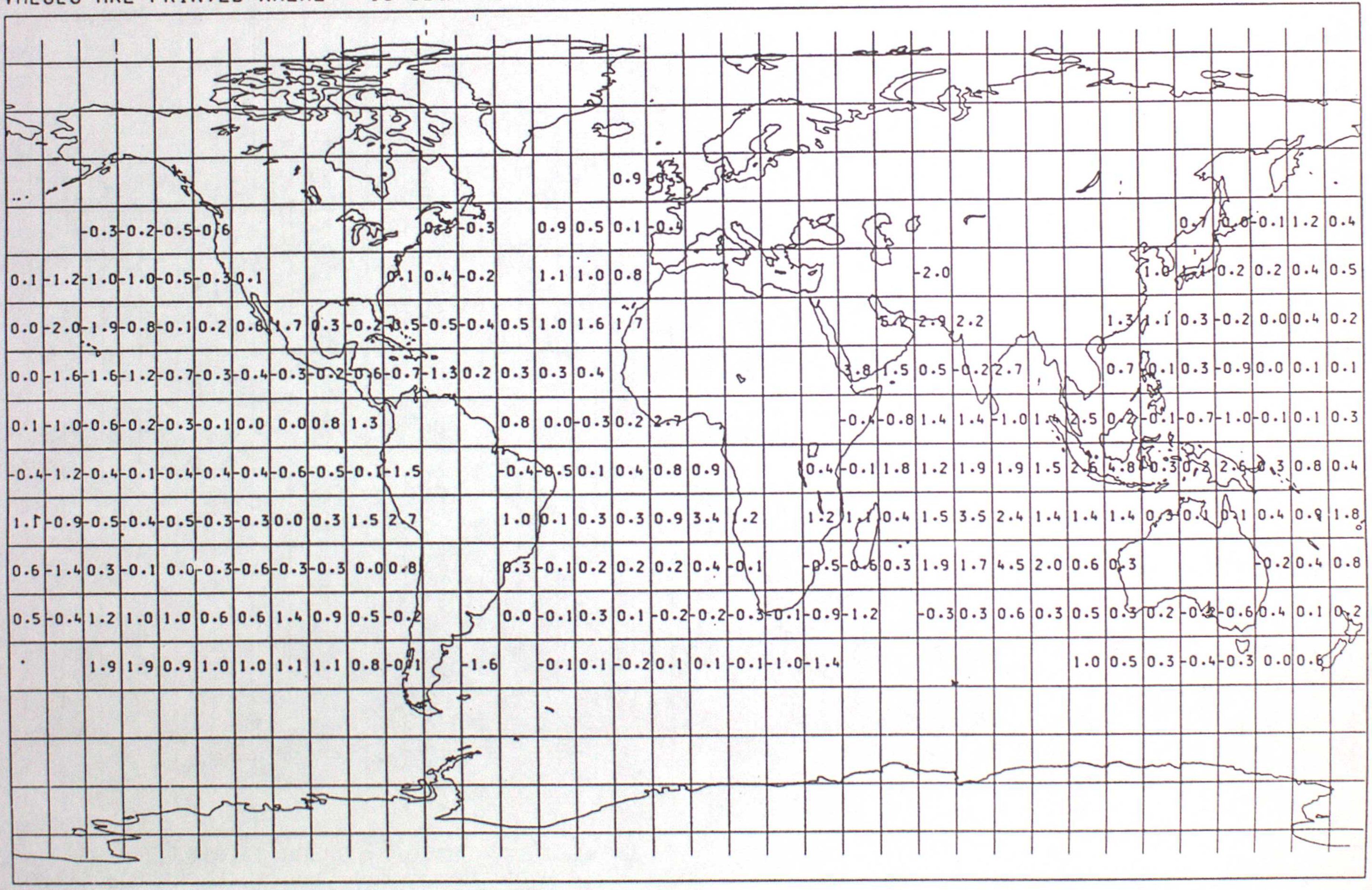
ALL OBSERVATIONS

ARROWS PLOTTED WHERE > 10 OBS ARE PRESENT

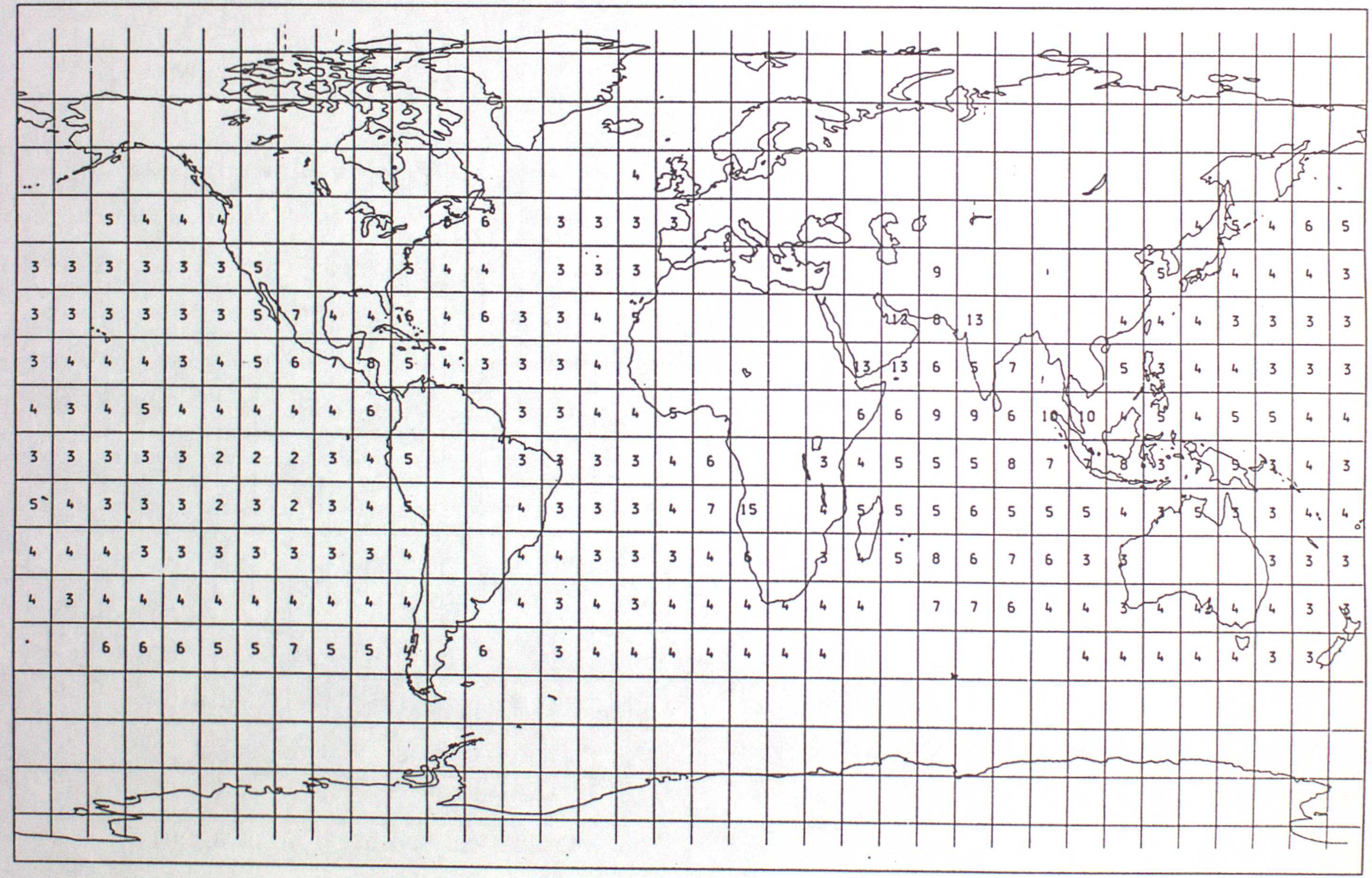
FIGURE 10


REPRESENTS 5 M/S

SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 11
AUGUST 1993
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 10 OBS ARE PRESENT


0.9
-0.3 -0.2 -0.5 -0.6 0.3 -0.3 0.9 0.5 0.1 -0.4 0.7 0.0 -0.1 1.2 0.4
0.1 -1.2 -1.0 -1.0 -0.5 -0.3 0.1 0.1 0.4 -0.2 1.1 1.0 0.8 -2.0 1.0 1.1 0.2 0.2 0.4 0.5
0.0 -2.0 -1.9 -0.8 -0.1 0.2 0.6 1.7 0.3 -0.2 0.5 -0.5 -0.4 0.5 1.0 1.6 1.7 5.2 2.9 2.2 1.3 1.1 0.3 -0.2 0.0 0.4 0.2
0.0 -1.6 -1.6 -1.2 -0.7 -0.3 -0.4 -0.3 -0.2 0.6 -0.7 -1.3 0.2 0.3 0.3 0.4 3.8 1.5 0.5 -0.2 2.7 0.7 0.1 0.3 -0.9 0.0 0.1 0.1
0.1 -1.0 -0.6 -0.2 -0.3 -0.1 0.0 0.0 0.8 1.3 0.8 0.0 -0.3 0.2 2.7 -0.4 -0.8 1.4 1.4 -1.0 1.4 2.5 0.2 -0.1 -0.7 -1.0 -0.1 0.1 0.3
-0.4 -1.2 -0.4 -0.1 -0.4 -0.4 -0.4 -0.6 -0.5 -0.1 -1.5 -0.4 -0.5 0.1 0.4 0.8 0.9 0.4 -0.1 1.8 1.2 1.9 1.9 1.5 2.6 4.8 -0.3 0.2 2.6 0.3 0.8 0.4
1.1 -0.9 -0.5 -0.4 -0.5 -0.3 -0.3 0.0 0.3 1.5 2.7 1.0 0.1 0.3 0.3 0.9 3.4 1.2 1.2 1.1 0.4 1.5 3.5 2.4 1.4 1.4 1.4 0.3 0.1 0.1 0.4 0.9 1.8
0.6 -1.4 0.3 -0.1 0.0 -0.3 -0.6 -0.3 -0.3 0.0 0.8 0.3 -0.1 0.2 0.2 0.2 0.4 -0.1 -0.5 -0.6 0.3 1.9 1.7 4.5 2.0 0.6 0.3 -0.2 0.4 0.8
0.5 -0.4 1.2 1.0 1.0 0.6 0.6 1.4 0.9 0.5 -0.2 0.0 -0.1 0.3 0.1 -0.2 -0.2 -0.3 -0.1 -0.9 -1.2 -0.3 0.3 0.6 0.3 0.5 0.3 0.2 -0.2 -0.6 0.4 0.1 0.2
1.9 1.9 0.9 1.0 1.0 1.1 1.1 0.8 -0.1 -1.6 -0.1 0.1 -0.2 0.1 0.1 -0.1 -1.0 -1.4 1.0 0.5 0.3 -0.4 -0.3 0.0 0.6

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 12
AUGUST 1993
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 10 OBS ARE PRESENT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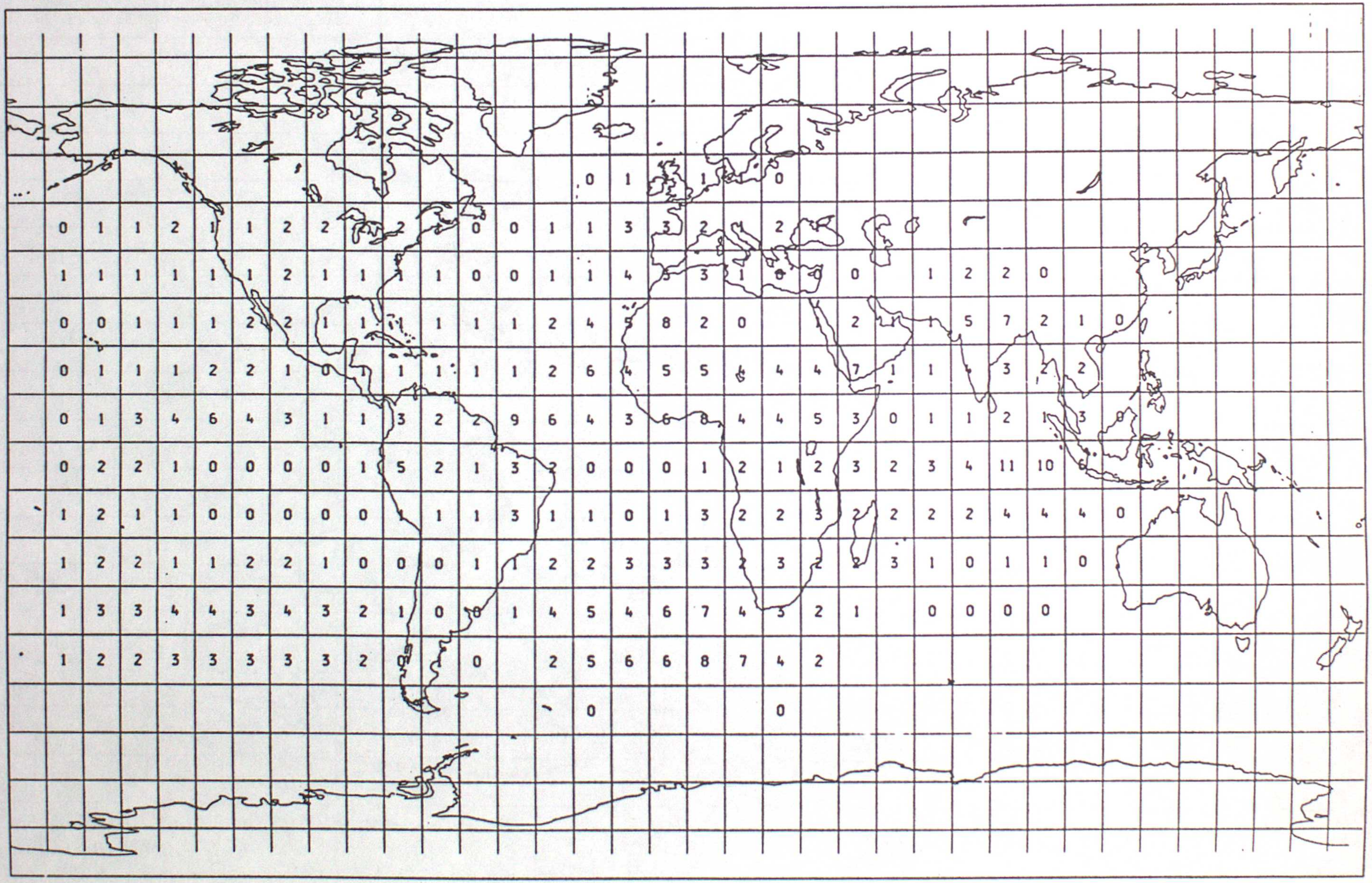
3 3 3 3 3 3 5 5 4 4 3 3 3 9 5 4 4 4 3
3 3 3 3 3 3 5 7 4 4 6 4 6 3 3 4 5 12 8 13 4 4 4 3 3 3 3
3 4 4 4 3 4 5 6 7 8 5 4 3 3 3 4 13 13 6 5 7 5 3 4 4 3 3 3
4 3 4 5 4 4 4 4 4 6 3 3 4 4 5 6 6 9 9 6 10 10 4 5 4 5 5 4 4
3 3 3 3 3 2 2 2 3 4 5 3 3 3 3 4 6 3 4 5 5 5 8 7 7 8 3 5 3 4 3
5 4 3 3 3 2 3 2 3 4 5 4 3 3 3 4 7 15 4 5 5 5 6 5 5 5 4 3 5 3 3 4 4
4 4 4 3 3 3 3 3 3 3 4 4 4 3 3 3 4 6 3 4 5 8 6 7 6 3 3 3 3 3
4 3 4 4 4 4 4 4 4 4 4 4 3 4 3 4 4 4 4 4 4 7 7 6 4 4 3 4 4 4 4 3 3
6 6 6 5 5 7 5 5 4 6 3 4 4 4 4 4 4 4 4 4 4 4 4 3 3

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 13
AUGUST 1993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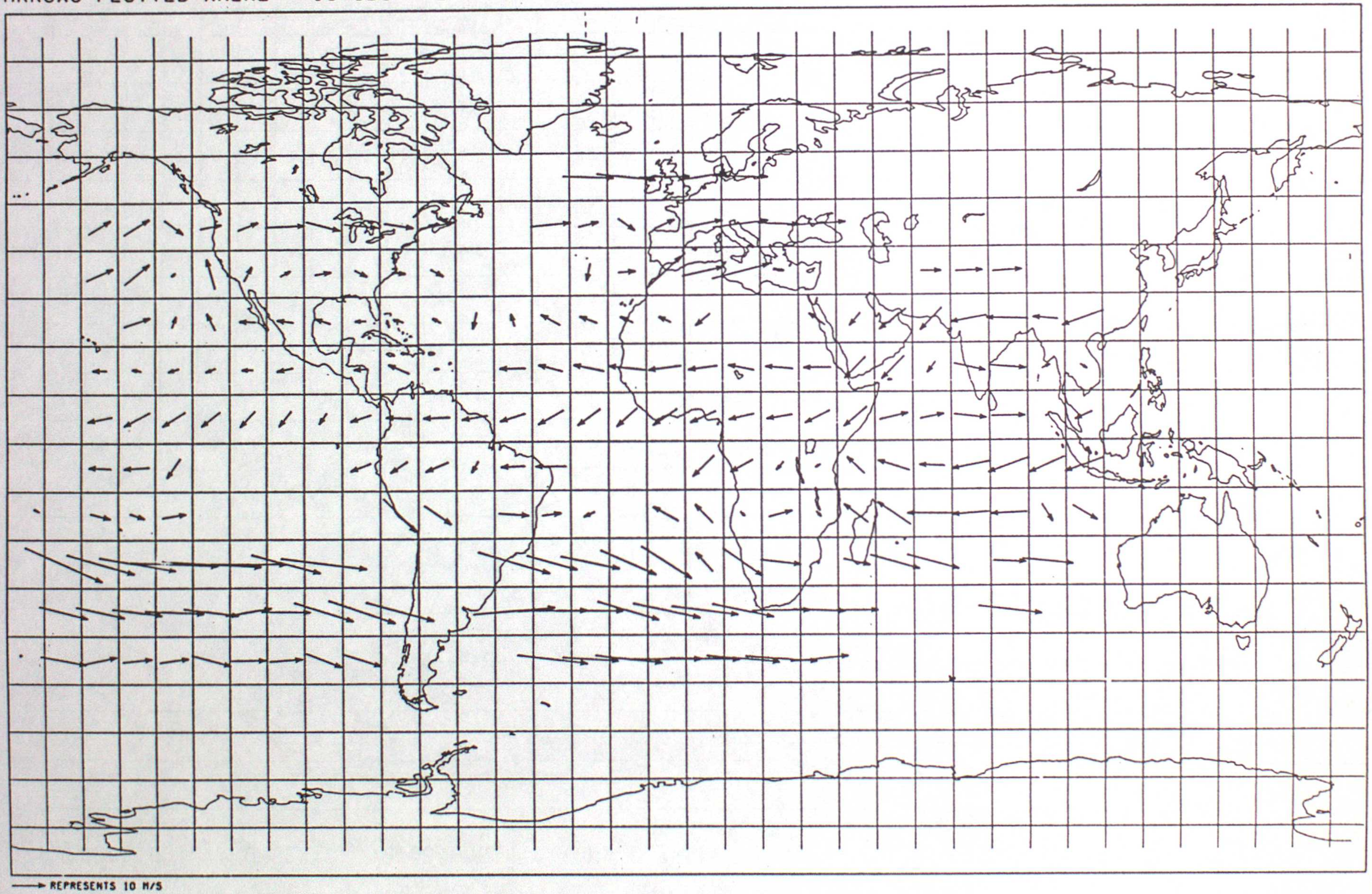
0 0 1 1 1 2 2 1 1 1 1 1 1 2 4 5 8 2 0 1 2 1 1 5 7 2 1 0
0 1 1 1 2 2 1 0 1 1 1 1 1 2 6 4 5 5 4 4 4 7 1 1 4 3 2 2
0 1 3 4 6 4 3 1 1 3 2 2 9 6 4 3 6 8 4 4 5 3 0 1 1 2 1 3 0
0 2 2 1 0 0 0 0 1 5 2 1 3 2 0 0 0 1 2 1 2 3 2 3 4 11 10 6
1 2 1 1 0 0 0 0 0 1 1 1 3 1 1 0 1 3 2 2 3 2 2 2 2 4 4 4 0
1 2 2 1 1 2 2 1 0 0 0 1 1 2 2 3 3 3 2 3 2 2 3 1 0 1 1 0
1 3 3 4 4 3 4 3 2 1 0 0 1 4 5 4 6 7 4 3 2 1 0 0 0 0
1 2 2 3 3 3 3 3 2 0 1 0 2 5 6 6 8 7 4 2
0 0

FIGURE 14

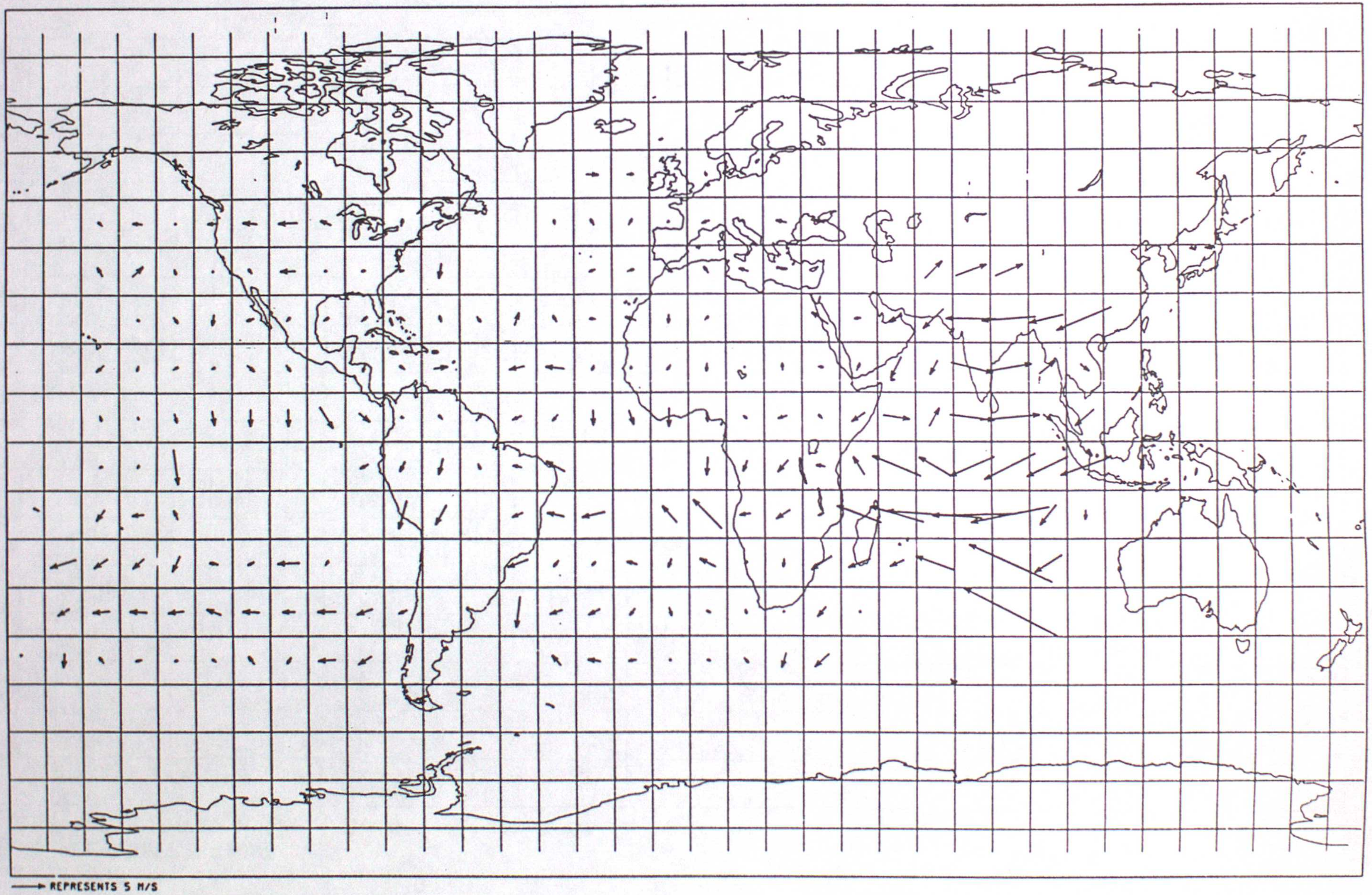
SATOB VECTOR MEAN WINDS BETWEEN 401-700 HPA
AUGUST 1993
ALL OBSERVATIONS
ARROWS PLOTTED WHERE > 10 OBS ARE PRESENT


REPRESENTS 10 M/S

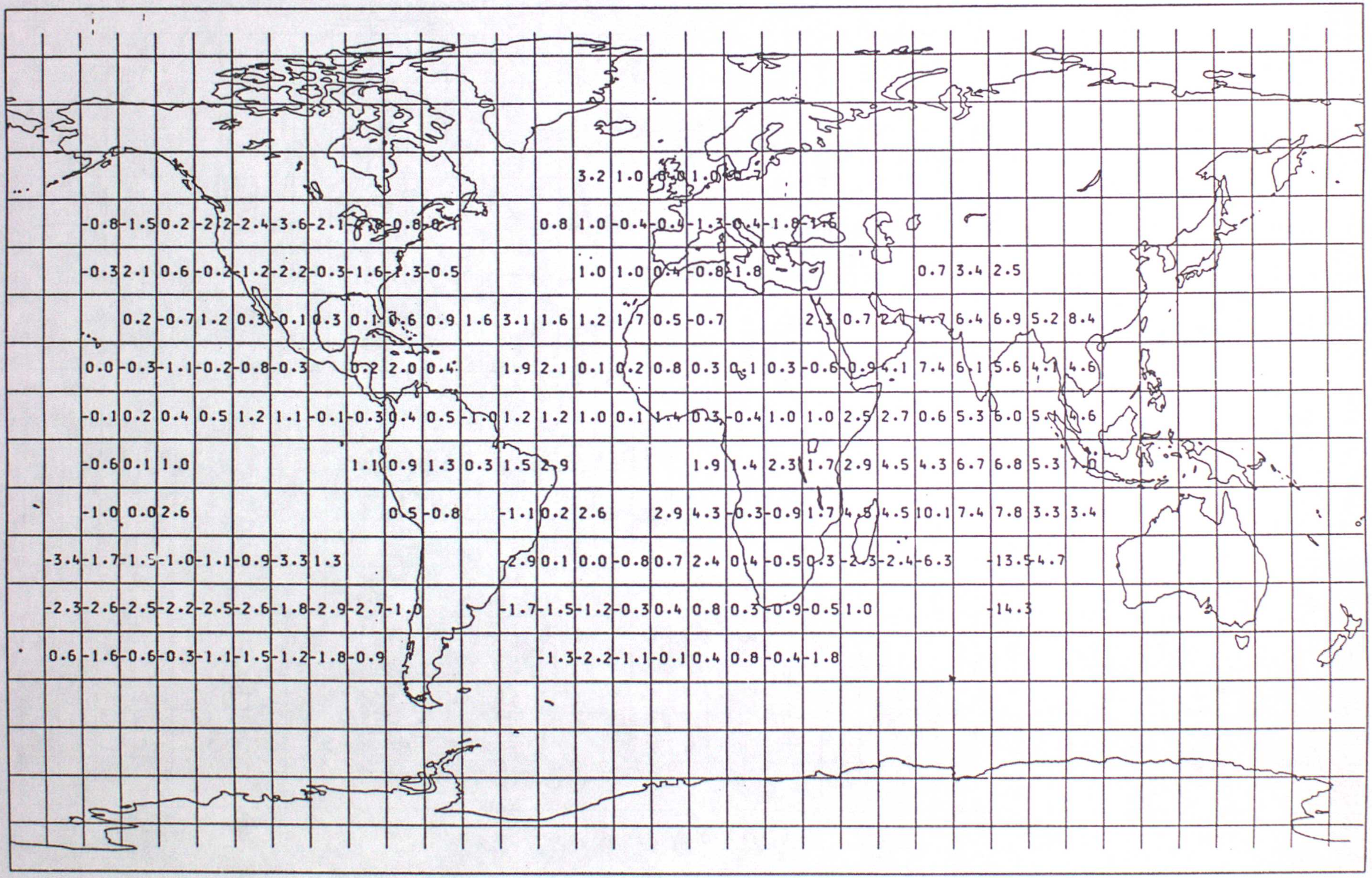
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 401-700 HPA

FIGURE 15

AUGUST 1993
ALL OBSERVATIONS
ARROWS PLOTTED WHERE > 10 OBS ARE PRESENT


REPRESENTS 5 M/S

SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 16
AUGUST 1993
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 10 OBS ARE PRESENT

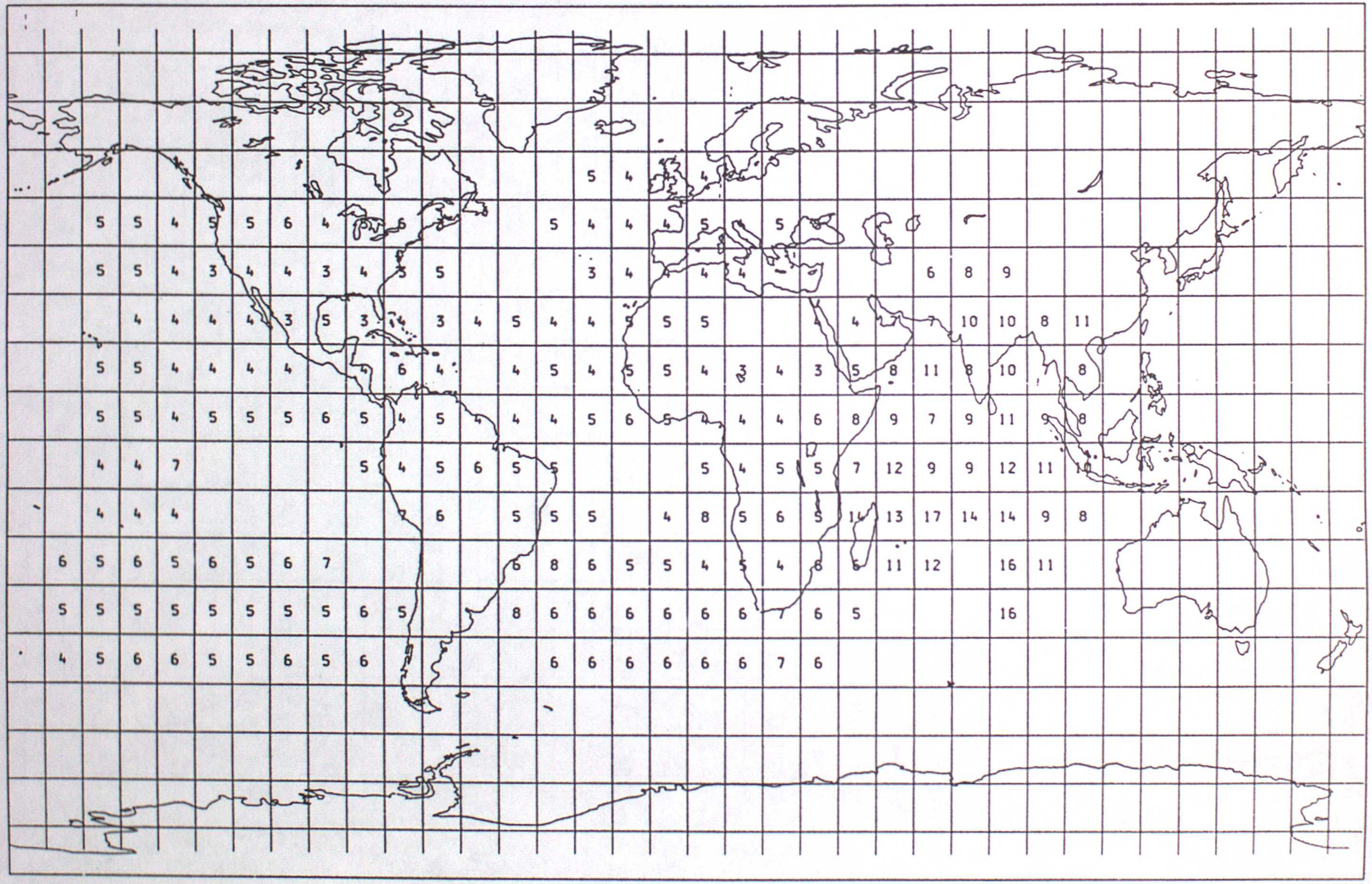

3.2 1.0 -0.0 1.0 -0.7
-0.8 -1.5 0.2 -2.2 -2.4 -3.6 -2.1 -2.8 -0.8 -0.1 0.8 1.0 -0.4 -0.4 -1.3 -0.4 -1.8 -1.6
-0.3 2.1 0.6 -0.2 -1.2 -2.2 -0.3 -1.6 -1.3 -0.5 1.0 1.0 0.4 -0.8 -1.8 0.7 3.4 2.5
0.2 -0.7 1.2 0.3 -0.1 0.3 0.1 0.6 0.9 1.6 3.1 1.6 1.2 1.7 0.5 -0.7 2.3 0.7 2.4 4.7 6.4 6.9 5.2 8.4
0.0 -0.3 -1.1 -0.2 -0.8 -0.3 0.2 2.0 0.4 1.9 2.1 0.1 0.2 0.8 0.3 0.1 0.3 -0.6 -0.9 4.1 7.4 6.1 5.6 4.1 4.6
-0.1 0.2 0.4 0.5 1.2 1.1 -0.1 -0.3 0.4 0.5 -1.0 1.2 1.2 1.0 0.1 1.4 0.3 -0.4 1.0 1.0 2.5 2.7 0.6 5.3 6.0 5.1 4.6
-0.6 0.1 1.0 1.1 0.9 1.3 0.3 1.5 2.9 1.9 1.4 2.3 1.7 2.9 4.5 4.3 6.7 6.8 5.3 7.0
-1.0 0.0 2.6 0.5 -0.8 -1.1 0.2 2.6 2.9 4.3 -0.3 -0.9 1.7 4.5 4.5 10.1 7.4 7.8 3.3 3.4
-3.4 -1.7 -1.5 -1.0 -1.1 -0.9 -3.3 1.3 -2.9 0.1 0.0 -0.8 0.7 2.4 0.4 -0.5 0.3 -2.3 -2.4 -6.3 -13.5 4.7
-2.3 -2.6 -2.5 -2.2 -2.5 -2.6 -1.8 -2.9 -2.7 -1.0 -1.7 -1.5 -1.2 -0.3 0.4 0.8 0.3 -0.9 -0.5 1.0 -14.3
0.6 -1.6 -0.6 -0.3 -1.1 -1.5 -1.2 -1.8 -0.9 -1.3 -2.2 -1.1 -0.1 0.4 0.8 -0.4 -1.8

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 17

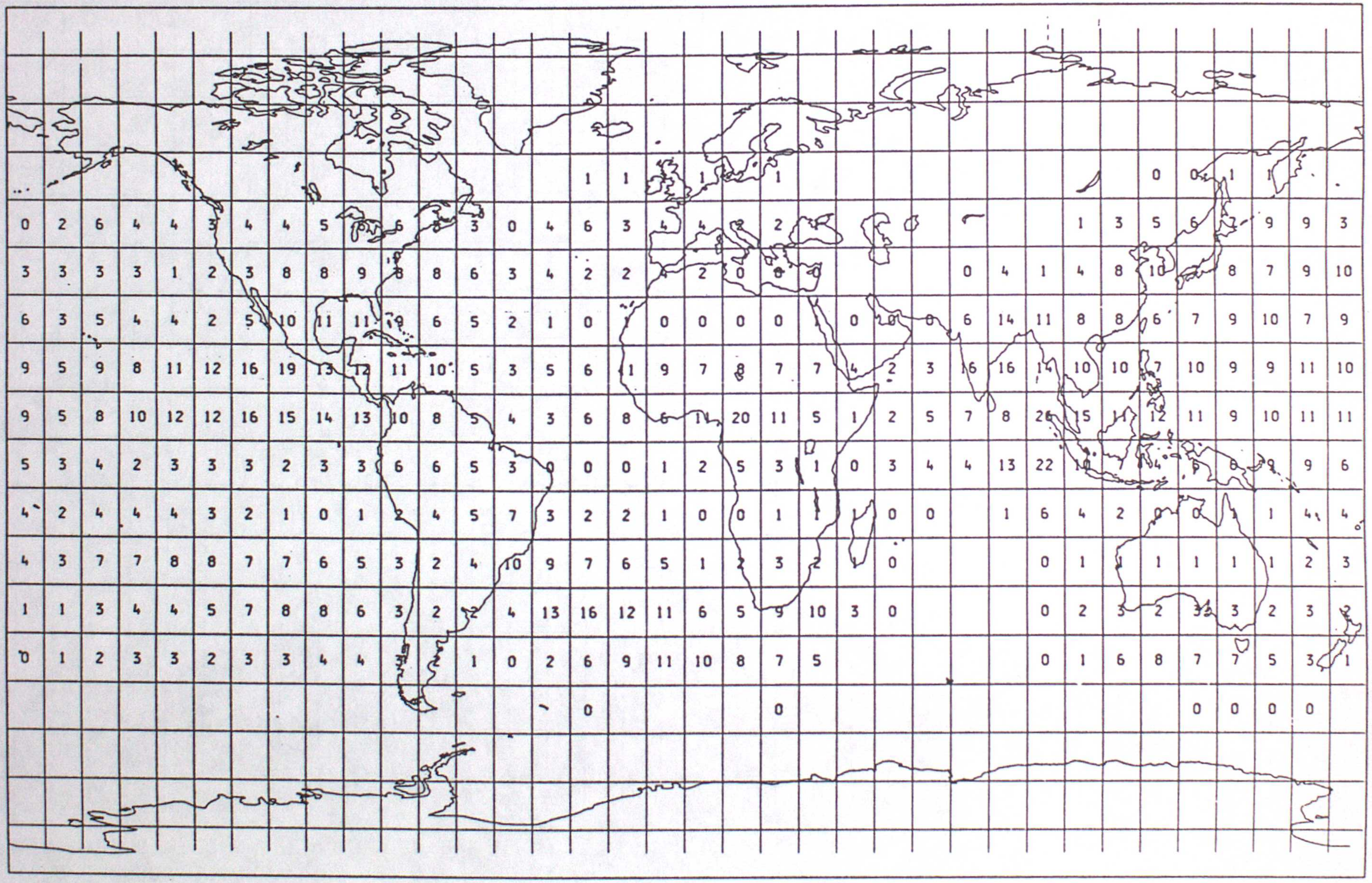
AUGUST 1993

USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE > 10 OBS ARE PRESENT


5 4 4
5 5 4 5 5 6 4 6 5 4 4 4 5 5
5 5 4 3 4 4 3 4 3 5 3 4 4 4 4 6 8 9
4 4 4 4 3 5 3 4 3 4 5 4 4 5 5 5 4 7 7 10 10 8 11
5 5 4 4 4 4 4 6 4 4 5 4 5 5 4 3 4 3 5 8 11 8 10 7 8
5 5 4 5 5 5 6 5 4 5 4 4 4 5 6 5 4 4 4 6 8 9 7 9 11 9 8
4 4 7 5 4 5 6 5 5 5 4 5 5 7 12 9 9 12 11
4 4 4 7 6 5 5 5 4 8 5 6 5 14 13 17 14 14 9 8
6 5 6 5 6 5 6 7 6 8 6 5 5 4 5 4 8 6 11 12 16 11
5 5 5 5 5 5 5 5 6 5 8 6 6 6 6 6 6 7 6 5 16
4 5 6 6 5 5 6 5 6 6 6 6 6 6 6 7 6

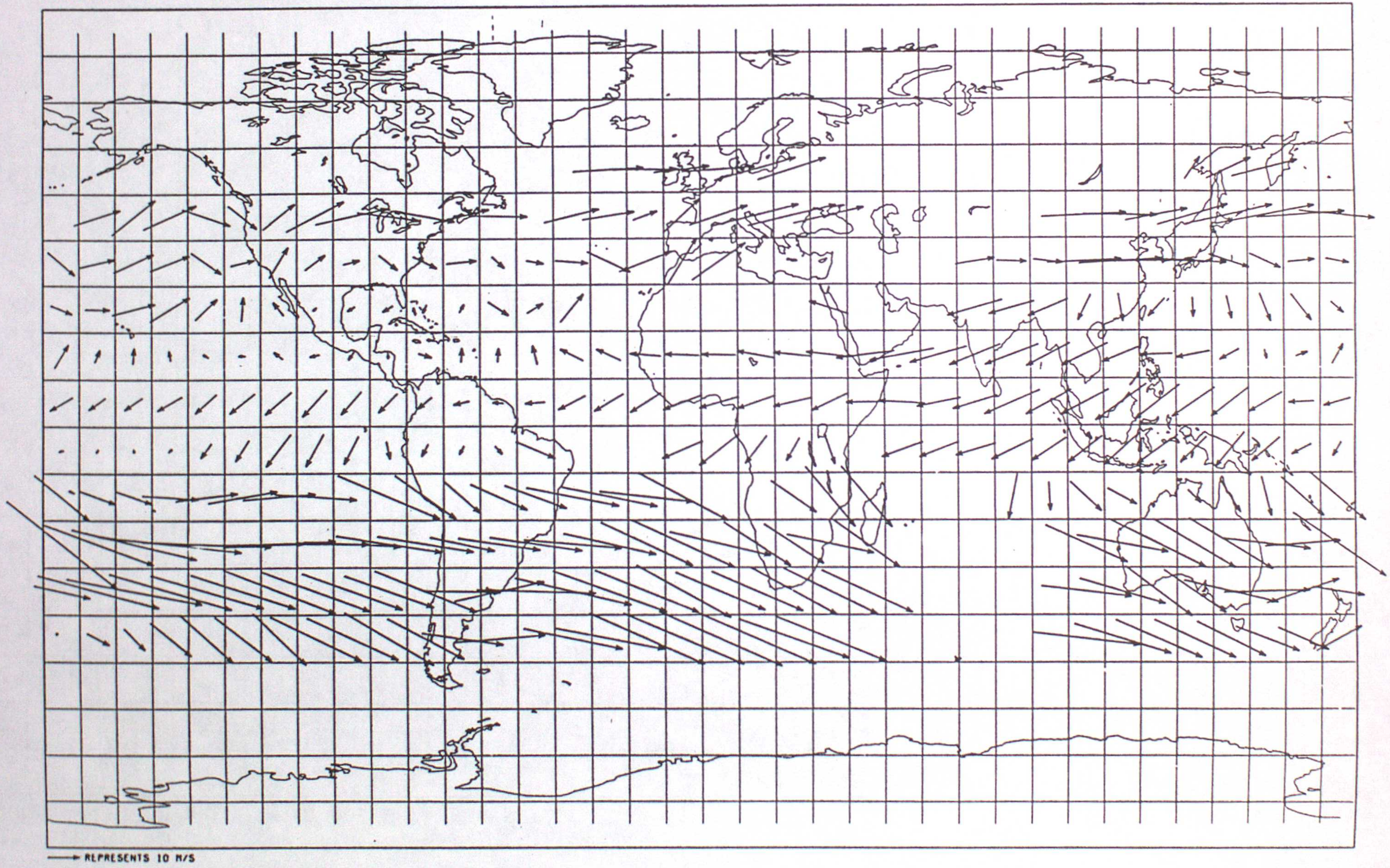
AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 18
AUGUST 1993



															1	1		1		1										0	0	1	1		
0	2	6	4	4	3	4	4	5	6	6	8	3	0	4	6	3	4	4	2	2								1	3	5	6	7	9	9	3
3	3	3	3	1	2	3	8	8	9	8	8	6	3	4	2	2	4	2	0	0	0				0	4	1	4	8	10		8	7	9	10
6	3	5	4	4	2	5	10	11	11	9	6	5	2	1	0	1	0	0	0	0	1	0	0	0	6	14	11	8	8	6	7	9	10	7	9
9	5	9	8	11	12	16	19	13	12	11	10	5	3	5	6	1	9	7	8	7	7	4	2	3	16	16	14	10	10	7	10	9	9	11	10
9	5	8	10	12	12	16	15	14	13	10	8	5	4	3	6	8	6	11	20	11	5	1	2	5	7	8	26	15	11	12	11	9	10	11	11
5	3	4	2	3	3	3	2	3	3	6	6	5	3	0	0	0	1	2	5	3	1	0	3	4	4	13	22	10	7	4	5	8	9	9	6
4	2	4	4	4	3	2	1	0	1	2	4	5	7	3	2	2	1	0	0	1	1	1	0	0		1	6	4	2	0	0	1	1	4	4
4	3	7	7	8	8	7	7	6	5	3	2	4	10	9	7	6	5	1	2	3	2	1	0				0	1	1	1	1	1	1	2	3
1	1	3	4	4	5	7	8	8	6	3	2	2	4	13	16	12	11	6	5	9	10	3	0				0	2	3	2	3	3	2	3	2
0	1	2	3	3	2	3	3	4	4	3	2	1	0	2	6	9	11	10	8	7	5						0	1	6	8	7	7	5	3	1
															0					0											0	0	0	0	

SATOB VECTOR MEAN WINDS BETWEEN 101-400 HPA
AUGUST 1993
ALL OBSERVATIONS
ARROWS PLOTTED WHERE > 10 OBS ARE PRESENT

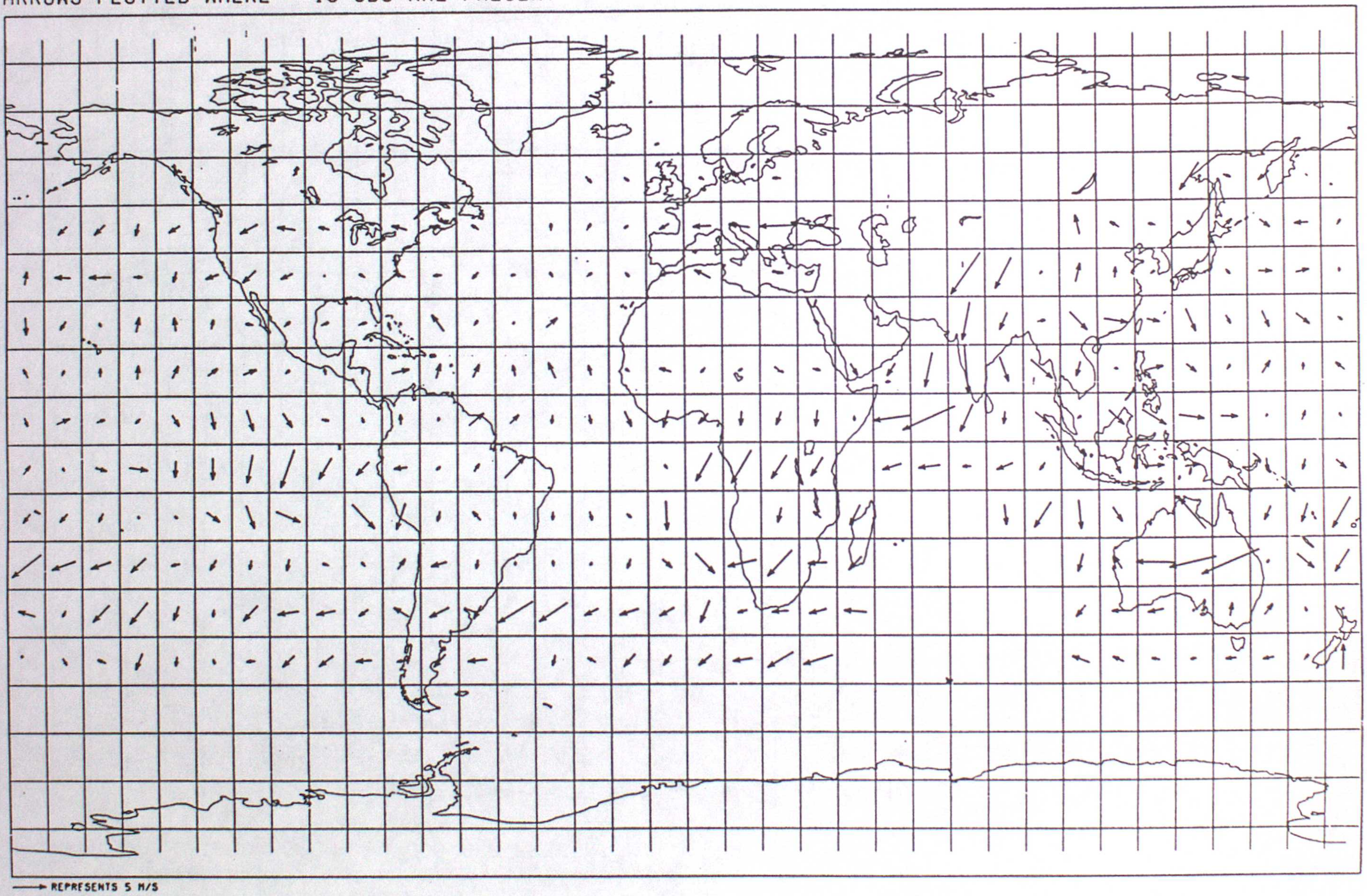
FIGURE 19


REPRESENTS 10 M/S

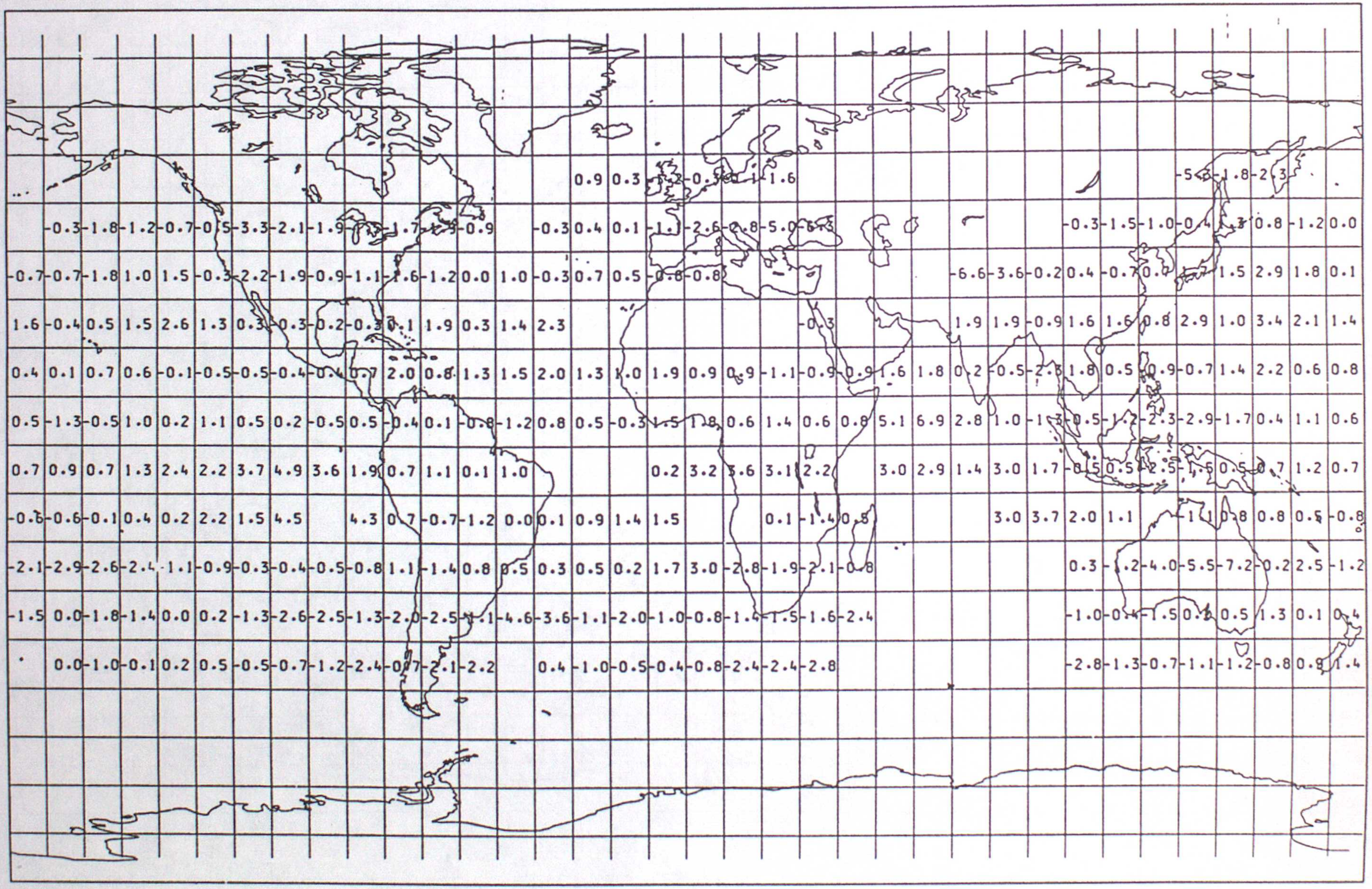
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 101-400 HPA

FIGURE 20

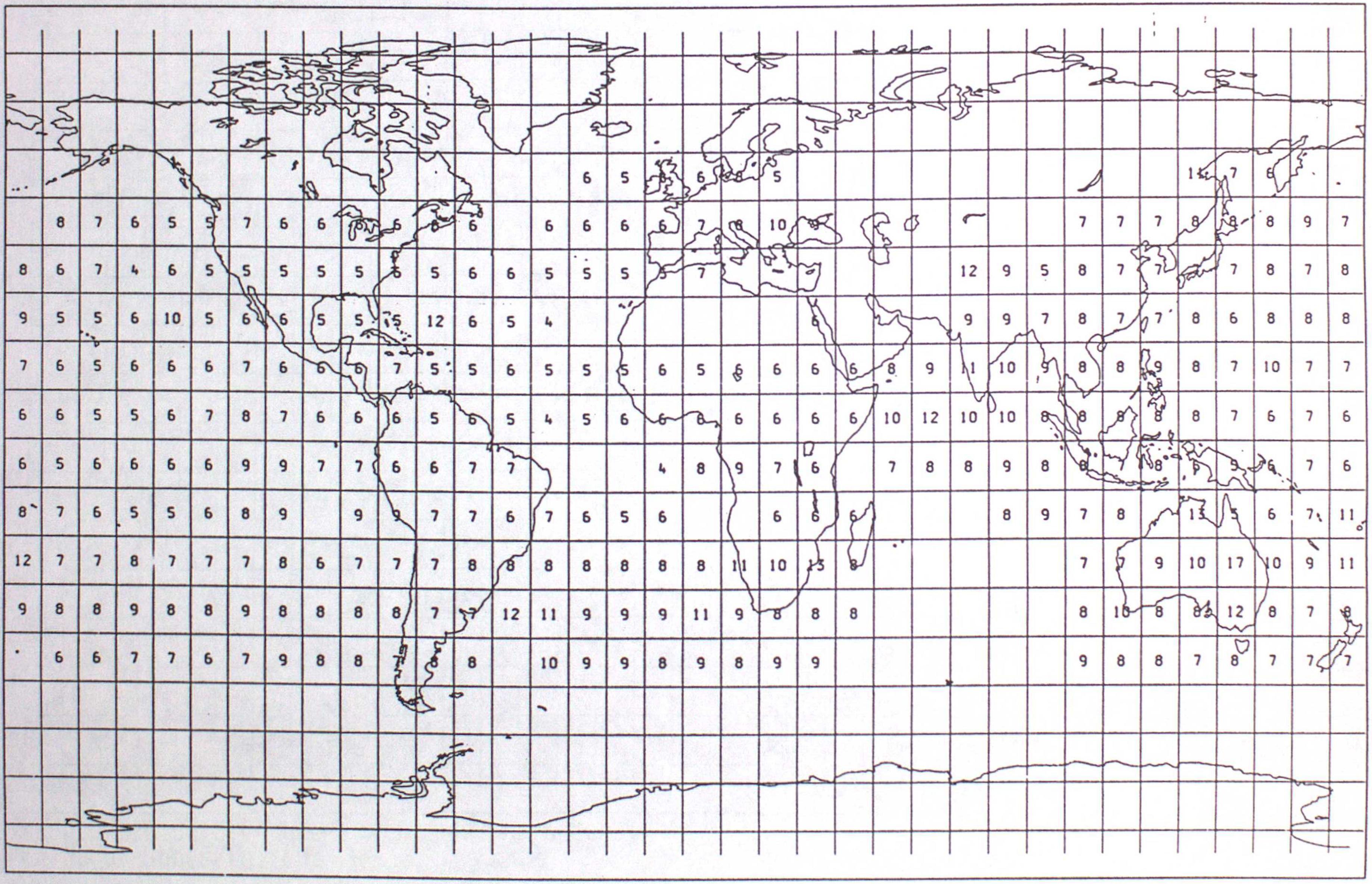
AUGUST 1993
ALL OBSERVATIONS
ARROWS PLOTTED WHERE > 10 OBS ARE PRESENT


REPRESENTS 5 M/S

SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 21
AUGUST 1993
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 10 OBS ARE PRESENT


0.9 0.3 -1.2 -0.3 -0.1 -1.6 -5.3 -1.8 -2.3
-0.3 -1.8 -1.2 -0.7 -0.5 -3.3 -2.1 -1.9 -1.5 -1.7 -1.9 -0.9 -0.3 0.4 0.1 -1.1 -2.6 -2.8 -5.0 -6.3 -0.3 -1.5 -1.0 -0.4 1.3 0.8 -1.2 0.0
-0.7 -0.7 -1.8 1.0 1.5 -0.3 -2.2 -1.9 -0.9 -1.1 -1.6 -1.2 0.0 1.0 -0.3 0.7 0.5 -0.8 -0.8 -6.6 -3.6 -0.2 0.4 -0.7 0.7 1.7 1.5 2.9 1.8 0.1
1.6 -0.4 0.5 1.5 2.6 1.3 0.3 -0.3 -0.2 -0.3 0.1 1.9 0.3 1.4 2.3 -0.3 1.9 1.9 -0.9 1.6 1.6 0.8 2.9 1.0 3.4 2.1 1.4
0.4 0.1 0.7 0.6 -0.1 -0.5 -0.5 -0.4 -0.4 0.7 2.0 0.8 1.3 1.5 2.0 1.3 1.0 1.9 0.9 0.9 -1.1 -0.9 -0.9 1.6 1.8 0.2 -0.5 -2.6 1.8 0.5 -0.9 -0.7 1.4 2.2 0.6 0.8
0.5 -1.3 -0.5 1.0 0.2 1.1 0.5 0.2 -0.5 0.5 -0.4 0.1 -0.8 -1.2 0.8 0.5 -0.3 1.5 1.8 0.6 1.4 0.6 0.8 5.1 6.9 2.8 1.0 -1.3 -0.5 -1.2 -2.3 -2.9 -1.7 0.4 1.1 0.6
0.7 0.9 0.7 1.3 2.4 2.2 3.7 4.9 3.6 1.9 0.7 1.1 0.1 1.0 0.2 3.2 3.6 3.1 2.2 3.0 2.9 1.4 3.0 1.7 -0.5 0.5 -2.5 -1.5 0.5 -0.7 1.2 0.7
-0.6 -0.6 -0.1 0.4 0.2 2.2 1.5 4.5 4.3 0.7 -0.7 -1.2 0.0 0.1 0.9 1.4 1.5 0.1 -1.4 0.8 3.0 3.7 2.0 1.1 -1.1 0.8 0.8 0.5 -0.8
-2.1 -2.9 -2.6 -2.4 -1.1 -0.9 -0.3 -0.4 -0.5 -0.8 1.1 -1.4 0.8 0.5 0.3 0.5 0.2 1.7 3.0 -2.8 -1.9 -2.1 -0.8 0.3 -1.2 -4.0 -5.5 -7.2 -0.2 2.5 -1.2
-1.5 0.0 -1.8 -1.4 0.0 0.2 -1.3 -2.6 -2.5 -1.3 -2.0 -2.5 -1.1 -4.6 -3.6 -1.1 -2.0 -1.0 -0.8 -1.4 -1.5 -1.6 -2.4 -1.0 -0.4 -1.5 0.2 0.5 1.3 0.1 0.4
0.0 -1.0 -0.1 0.2 0.5 -0.5 -0.7 -1.2 -2.4 -0.7 -2.1 -2.2 0.4 -1.0 -0.5 -0.4 -0.8 -2.4 -2.4 -2.8 -2.8 -1.3 -0.7 -1.1 -1.2 -0.8 0.8 1.4

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 22
AUGUST 1993
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 10 OBS ARE PRESENT


6 5 6 6 8 5 14 7 6
8 7 6 5 5 7 6 6 6 6 6 6 6 6 6 7 8 10 7 7 7 8 8 8 9 7
8 6 7 4 6 5 5 5 5 5 5 5 6 6 5 5 5 5 7 12 9 5 8 7 7 7 8 7 8
9 5 5 6 10 5 6 6 5 5 5 12 6 5 4 6 9 9 7 8 7 7 8 6 8 8 8
7 6 5 6 6 6 7 6 6 6 7 5 5 6 5 5 5 6 5 6 6 6 6 8 9 11 10 9 8 8 9 8 7 10 7 7
6 6 5 5 6 7 8 7 6 6 6 5 6 5 4 5 6 6 6 6 6 6 6 10 12 10 10 8 8 8 8 8 7 6 7 6
6 5 6 6 6 6 9 9 7 7 6 6 7 7 4 8 9 7 6 7 8 8 9 8 8 7 8 9 9 6 7 6
8 7 6 5 5 6 8 9 9 9 7 7 6 7 6 5 6 6 6 6 8 9 7 8 13 5 6 7 11
12 7 7 8 7 7 7 8 6 7 7 7 8 8 8 8 8 8 8 11 10 13 8 7 7 9 10 17 10 9 11
9 8 8 9 8 8 9 8 8 8 8 7 7 12 11 9 9 9 11 9 8 8 8 8 10 8 8 12 8 7 8
6 6 7 7 6 7 9 8 8 7 8 8 10 9 9 8 9 8 9 9 9 8 8 7 8 7 7 7

MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH: August, 93

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-11, NOAA-12 500 km.

Standard of comparison :Background field from Bracknell global model.

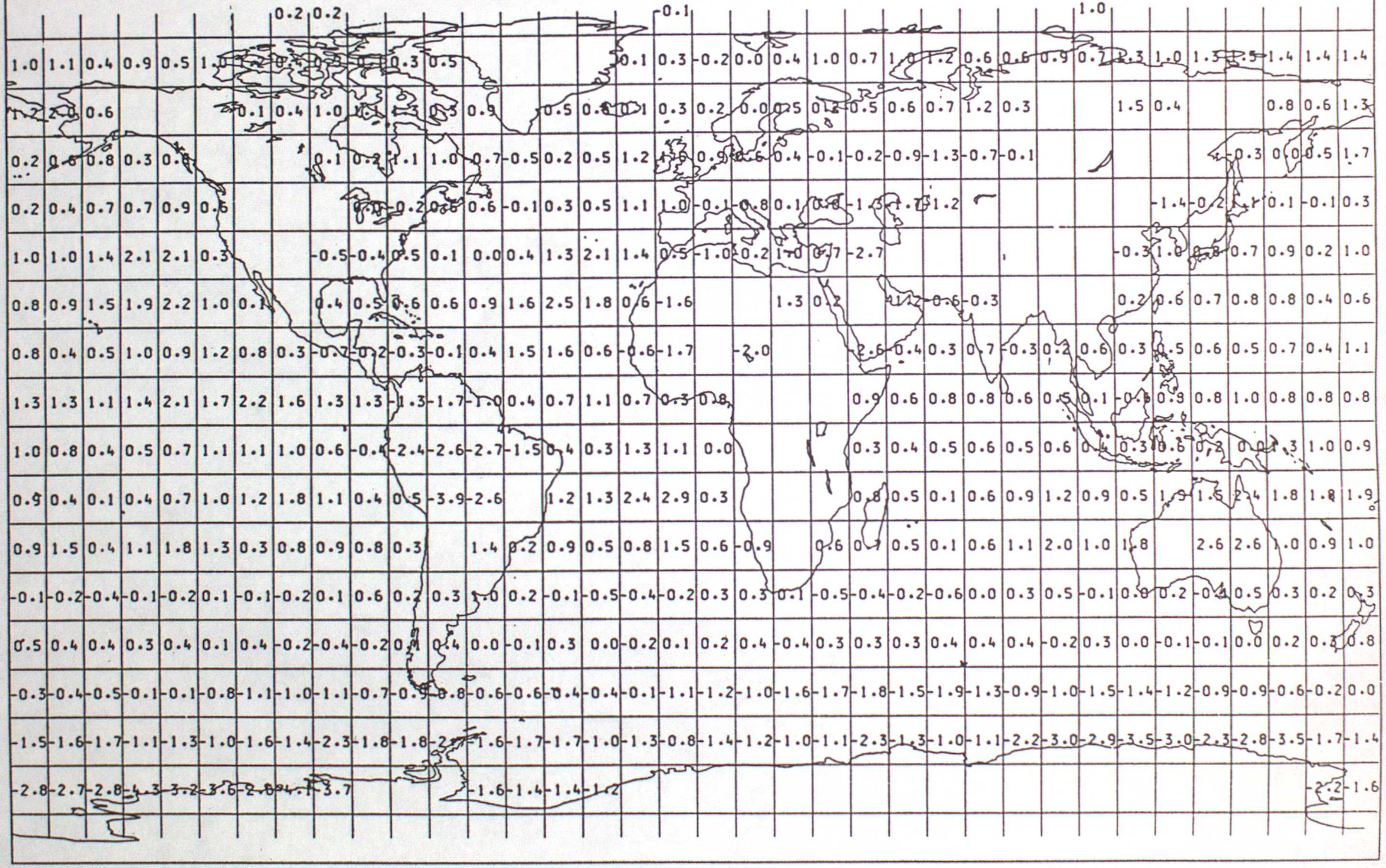
Selection Criteria :All SATEM soundings where number of observations > 30.

Data Extracted :Layer:
850 - 1000 hPa
100 - 300 hPa
30 - 50 hPa

:Mean observation minus background temperature differences

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
AUGUST 1993
NOAA-11. USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

FIGURE 23

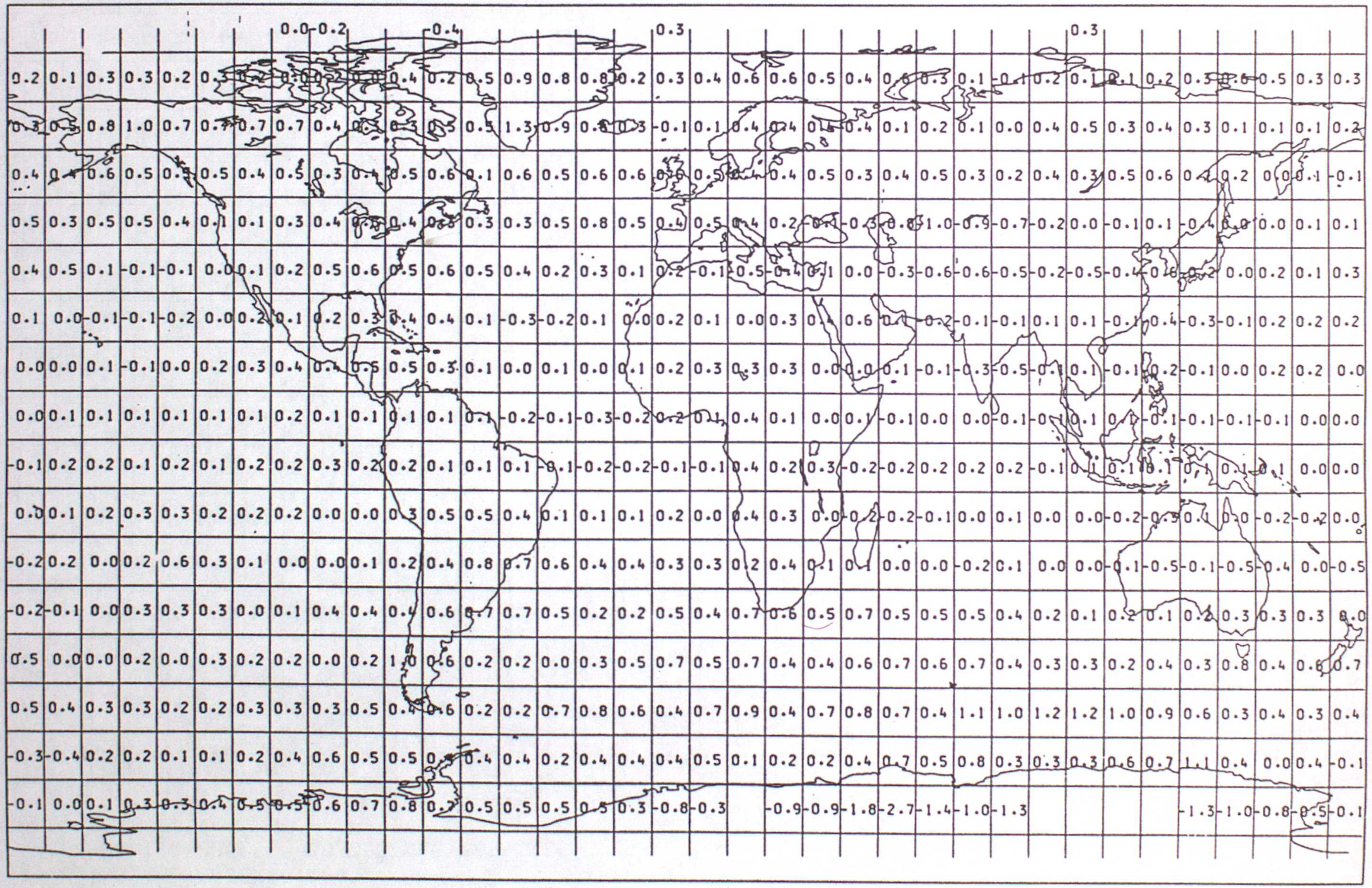

0.2 0.2 -0.1 1.0
1.0 1.1 0.4 0.9 0.5 0.3 0.5 0.1 0.3 -0.2 0.0 0.4 1.0 0.7 1.2 0.6 0.6 0.9 1.0 -1.4 1.4 1.4
0.6 0.1 0.4 1.0 0.9 0.5 0.3 0.2 0.5 -0.5 0.6 0.7 1.2 0.3 1.5 0.4 0.8 0.6 1.3
0.2 0.8 0.3 0.1 1.1 1.0 -0.7 -0.5 0.2 0.5 1.2 -0.4 -0.1 -0.2 -0.9 -1.3 -0.7 -0.1 -0.3 1.7
0.2 0.4 0.7 0.7 0.9 0.6 0.6 -0.1 0.3 0.5 1.1 -0.8 0.1 1.2 -1.4 0.1 -0.1 0.3
1.0 1.0 1.4 2.1 2.1 0.3 -0.5 -0.4 0.5 0.1 0.0 0.4 1.3 2.1 1.4 -1.0 0.2 -2.7 -0.3 -0.7 0.9 0.2 1.0
0.8 0.9 1.5 1.9 2.2 1.0 0.4 0.6 0.6 0.9 1.6 2.5 1.8 -1.6 1.3 -0.3 0.2 0.6 0.7 0.8 0.8 0.4 0.6
0.8 0.4 0.5 1.0 0.9 1.2 0.8 0.3 -0.3 0.4 1.5 1.6 0.6 -1.7 -2.0 -0.4 0.3 0.7 0.6 0.3 0.5 0.6 0.5 0.7 0.4 1.1
1.3 1.3 1.1 1.4 2.1 1.7 2.2 1.6 1.3 1.3 -1.3 -1.7 0.4 0.7 1.1 0.7 0.9 0.6 0.8 0.8 0.6 0.8 1.0 0.8 0.8 0.8
1.0 0.8 0.4 0.5 0.7 1.1 1.1 1.0 0.6 -2.4 -2.6 -2.7 -1.5 0.3 1.3 1.1 0.0 0.3 0.4 0.5 0.6 0.5 0.6 1.0 0.9
0.4 0.1 0.4 0.7 1.0 1.2 1.8 1.1 0.4 -3.9 -2.6 1.2 1.3 2.4 2.9 0.3 0.5 0.1 0.6 0.9 1.2 0.9 0.5 1.8 1.9
0.9 1.5 0.4 1.1 1.8 1.3 0.3 0.8 0.9 0.8 0.3 1.4 0.9 0.5 0.8 1.5 0.6 -0.9 0.6 0.5 0.1 0.6 1.1 2.0 1.0 2.6 2.6 0.9 1.0
-0.1 -0.2 -0.4 -0.1 -0.2 0.1 -0.1 -0.2 0.1 0.6 0.3 0.2 -0.1 -0.5 -0.4 -0.2 0.3 0.3 -0.5 -0.4 -0.2 -0.6 0.0 0.3 0.5 -0.1 0.2 0.5 0.3 0.2
0.5 0.4 0.4 0.3 0.4 0.1 0.4 -0.2 -0.4 -0.2 0.0 -0.1 0.3 0.0 -0.2 0.1 0.2 0.4 -0.4 0.3 0.3 0.3 0.4 0.4 0.4 -0.2 0.3 0.0 -0.1 -0.1 0.0 0.2 0.8
-0.3 -0.4 -0.5 -0.1 -0.1 -0.8 -1.1 -1.0 -1.1 -0.7 -0.8 -0.6 -0.6 -0.4 -0.4 -0.1 -1.1 -1.2 -1.0 -1.6 -1.7 -1.8 -1.5 -1.9 -1.3 -0.9 -1.0 -1.5 -1.4 -1.2 -0.9 -0.9 -0.6 -0.2 0.0
-1.5 -1.6 -1.7 -1.1 -1.3 -1.0 -1.6 -1.4 -2.3 -1.8 -1.8 -1.6 -1.7 -1.7 -1.0 -1.3 -0.8 -1.4 -1.2 -1.0 -1.1 -2.3 -1.0 -1.1 -2.2 -3.0 -3.0 -2.3 -2.8 -3.5 -1.7 -1.4
-2.8 -2.7 -2.8 -3.2 -3.7 -1.6 -1.4 -1.4 -1.2 -1.6

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA

AUGUST 1993 FIGURE 24

NOAA-11, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT


0.0-0.2 -0.4 0.3 0.3
0.2 0.1 0.3 0.3 0.2 0.3 0.4 0.2 0.5 0.9 0.8 0.8 0.2 0.3 0.4 0.6 0.6 0.5 0.4 0.6 0.3 0.1 -0.1 0.2 0.1 0.1 0.2 0.3 -0.5 0.3 0.3
0.3 0.5 0.8 1.0 0.7 0.7 0.7 0.7 0.4 0.3 0.3 0.5 1.3 0.9 0.8 0.3 -0.1 0.1 0.4 0.4 0.4 -0.4 0.1 0.2 0.1 0.0 0.4 0.5 0.3 0.4 0.3 0.1 0.1 0.1 0.2
0.4 0.4 0.6 0.5 0.5 0.5 0.4 0.5 0.3 0.4 0.5 0.6 0.1 0.6 0.5 0.6 0.6 0.6 0.5 0.4 0.4 0.5 0.3 0.4 0.5 0.3 0.2 0.4 0.3 0.5 0.6 0.4 0.2 0.0 0.1 -0.1
0.5 0.3 0.5 0.5 0.4 0.1 0.1 0.3 0.4 0.5 0.4 0.3 0.3 0.3 0.5 0.8 0.5 0.4 0.5 0.4 0.2 -0.1 -0.3 -0.8 -1.0 -0.9 -0.7 -0.2 0.0 -0.1 0.1 -0.4 0.0 0.0 0.1 0.1
0.4 0.5 0.1 -0.1 -0.1 0.0 0.1 0.2 0.5 0.6 0.5 0.6 0.5 0.4 0.2 0.3 0.1 0.2 -0.1 -0.5 -0.4 0.1 0.0 -0.3 -0.6 -0.6 -0.5 -0.2 -0.5 -0.4 -0.6 -0.2 0.0 0.2 0.1 0.3
0.1 0.0 -0.1 -0.1 -0.2 0.0 0.2 0.1 0.2 0.3 0.4 0.4 0.1 -0.3 -0.2 0.1 0.0 0.2 0.1 0.0 0.3 0.4 0.6 0.4 -0.2 -0.1 -0.1 0.1 0.1 -0.1 -0.4 -0.3 -0.1 0.2 0.2 0.2
0.0 0.0 0.1 -0.1 0.0 0.2 0.3 0.4 0.4 0.5 0.5 0.3 0.1 0.0 0.1 0.0 0.1 0.2 0.3 0.3 0.3 0.0 0.0 0.1 -0.1 -0.3 -0.5 -0.1 0.1 -0.1 0.2 -0.1 0.0 0.2 0.2 0.0
0.0 0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.1 0.1 0.1 0.1 0.1 -0.2 -0.1 -0.3 -0.2 0.2 0.1 0.4 0.1 0.0 0.1 -0.1 0.0 0.0 -0.1 -0.1 0.1 0.1 -0.1 -0.1 -0.1 -0.1 0.0 0.0
-0.1 0.2 0.2 0.1 0.2 0.1 0.2 0.2 0.3 0.2 0.2 0.1 0.1 0.1 -0.1 -0.2 -0.2 -0.1 -0.1 0.4 0.2 0.3 -0.2 -0.2 0.2 0.2 0.2 -0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.0 0.0
0.0 0.1 0.2 0.3 0.3 0.2 0.2 0.2 0.0 0.0 0.3 0.5 0.5 0.4 0.1 0.1 0.1 0.2 0.0 0.4 0.3 0.0 0.2 -0.2 -0.1 0.0 0.1 0.0 0.0 -0.2 -0.3 0.1 0.0 -0.2 -0.2 0.0
-0.2 0.2 0.0 0.2 0.6 0.3 0.1 0.0 0.0 0.1 0.2 0.4 0.8 0.7 0.6 0.4 0.4 0.3 0.3 0.2 0.4 0.1 0.1 0.0 0.0 -0.2 0.1 0.0 0.0 -0.1 -0.5 -0.1 -0.5 -0.4 0.0 -0.5
-0.2 -0.1 0.0 0.3 0.3 0.3 0.0 0.1 0.4 0.4 0.4 0.6 0.7 0.7 0.5 0.2 0.2 0.5 0.4 0.7 0.6 0.5 0.7 0.5 0.5 0.5 0.4 0.2 0.1 0.2 0.1 0.2 0.3 0.3 0.3 0.0
0.5 0.0 0.0 0.2 0.0 0.3 0.2 0.2 0.0 0.2 1.0 0.6 0.2 0.2 0.0 0.3 0.5 0.7 0.5 0.7 0.4 0.4 0.6 0.7 0.6 0.7 0.4 0.3 0.3 0.2 0.4 0.3 0.8 0.4 0.6 0.7
0.5 0.4 0.3 0.3 0.2 0.2 0.3 0.3 0.3 0.5 0.4 0.6 0.2 0.2 0.7 0.8 0.6 0.4 0.7 0.9 0.4 0.7 0.8 0.7 0.4 1.1 1.0 1.2 1.2 1.0 0.9 0.6 0.3 0.4 0.3 0.4
-0.3 -0.4 0.2 0.2 0.1 0.1 0.2 0.4 0.6 0.5 0.5 0.4 0.4 0.4 0.2 0.4 0.4 0.4 0.5 0.1 0.2 0.2 0.4 0.7 0.5 0.8 0.3 0.3 0.3 0.6 0.7 1.1 0.4 0.0 0.4 -0.1
-0.1 0.0 0.1 0.3 0.3 0.4 0.5 0.5 0.6 0.7 0.8 0.7 0.5 0.5 0.5 0.5 0.3 -0.8 -0.3 -0.9 -0.9 -1.8 -2.7 -1.4 -1.0 -1.3 -1.3 -1.0 -0.8 -0.5 -0.1

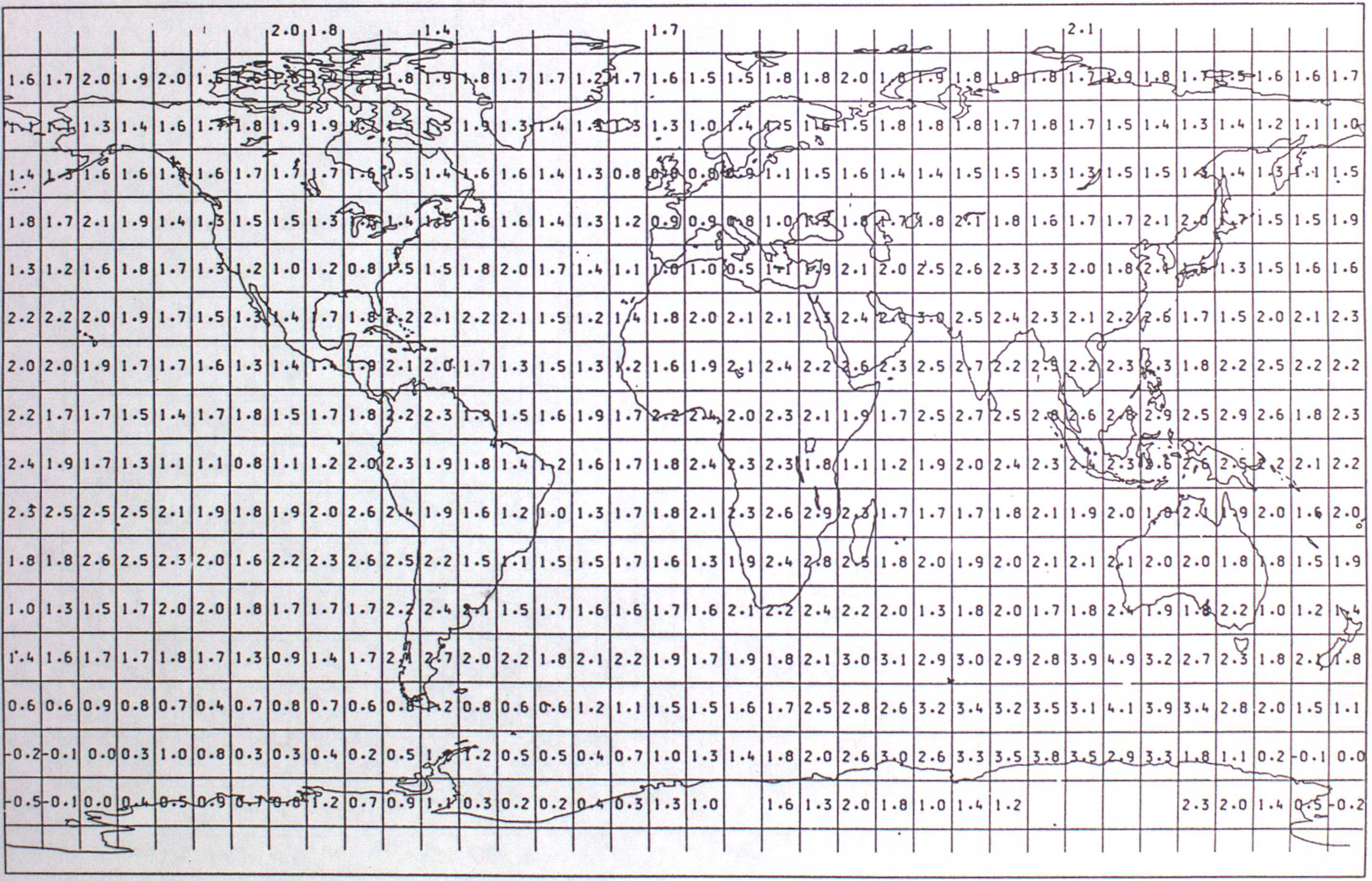
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA

AUGUST 1993

FIGURE 25

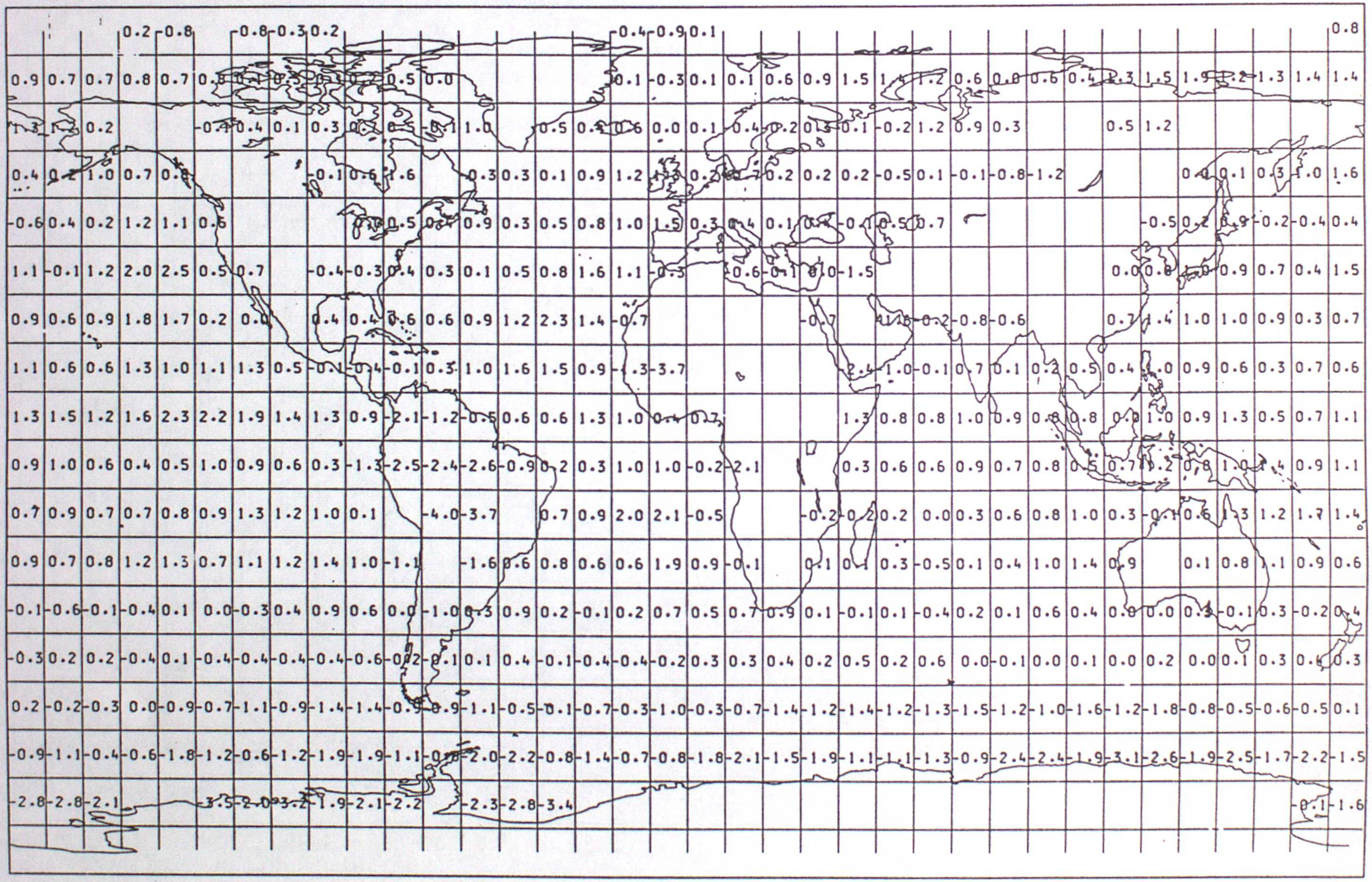
NOAA-11, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT



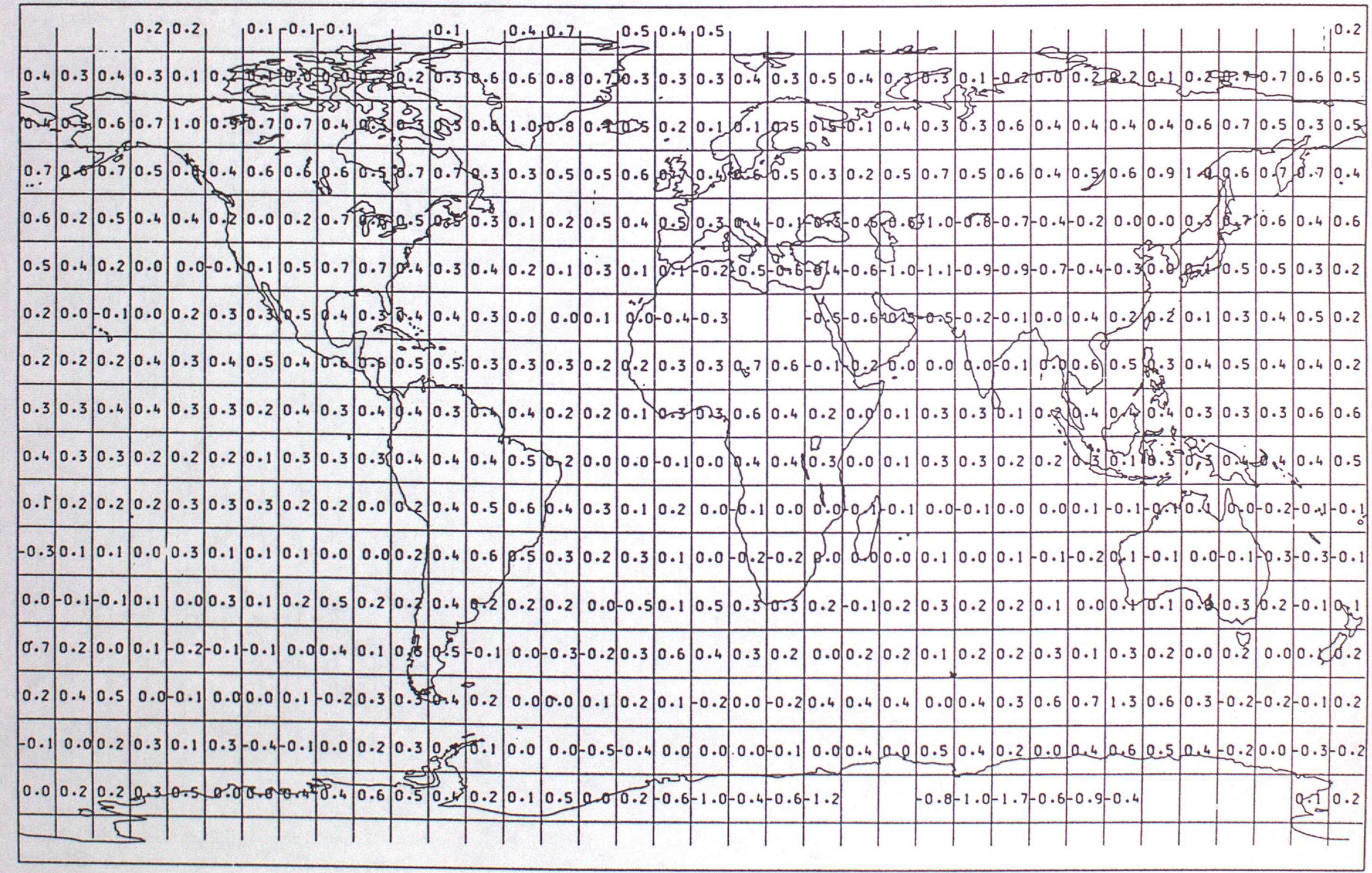
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
AUGUST 1993
NOAA-12. USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

FIGURE 26



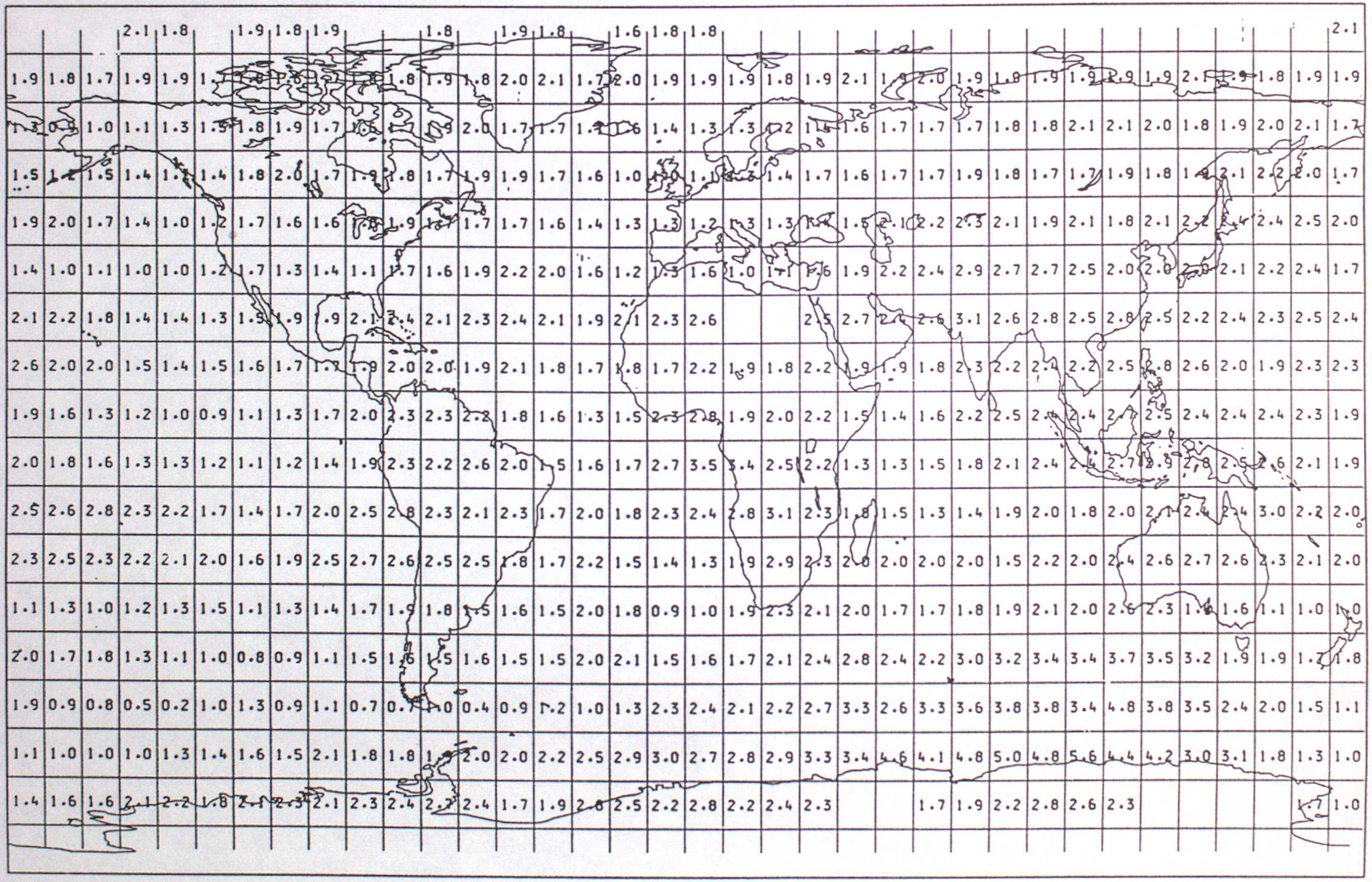
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
AUGUST 1993
NOAA-12. USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

FIGURE 27


0.2 0.2 0.1 -0.1 -0.1 0.1 0.4 0.7 0.5 0.4 0.5 0.2
0.4 0.3 0.4 0.3 0.1 0.2 0.1 0.0 0.0 0.2 0.2 0.3 0.6 0.6 0.8 0.7 0.3 0.3 0.3 0.4 0.3 0.5 0.4 0.3 0.3 0.1 -0.2 0.0 0.2 0.2 0.1 0.2 0.7 -0.7 0.6 0.5
0.4 0.5 0.6 0.7 1.0 0.9 0.7 0.7 0.4 0.3 0.3 0.3 0.6 1.0 0.8 0.4 0.5 0.2 0.1 0.1 0.5 0.5 -0.1 0.4 0.3 0.3 0.6 0.4 0.4 0.4 0.4 0.6 0.7 0.5 0.3 0.5
0.7 0.6 0.7 0.5 0.6 0.4 0.6 0.6 0.6 0.5 0.7 0.7 0.3 0.3 0.5 0.5 0.6 0.7 0.4 0.6 0.5 0.3 0.2 0.5 0.7 0.5 0.6 0.4 0.5 0.6 0.9 1.0 0.6 0.7 0.7 0.4
0.6 0.2 0.5 0.4 0.4 0.2 0.0 0.2 0.7 0.6 0.5 0.5 0.3 0.1 0.2 0.5 0.4 0.5 0.3 0.4 -0.1 -0.3 -0.6 -0.6 -1.0 -0.8 -0.7 -0.4 -0.2 0.0 0.0 0.3 0.7 0.6 0.4 0.6
0.5 0.4 0.2 0.0 0.0 -0.1 0.1 0.5 0.7 0.7 0.4 0.3 0.4 0.2 0.1 0.3 0.1 0.1 -0.2 -0.5 -0.6 -0.4 -0.6 -1.0 -1.1 -0.9 -0.9 -0.7 -0.4 -0.3 0.0 0.1 0.5 0.5 0.3 0.2
0.2 0.0 -0.1 0.0 0.2 0.3 0.3 0.5 0.4 0.3 0.4 0.4 0.3 0.0 0.0 0.1 0.0 -0.4 -0.3 -0.5 -0.6 -0.5 -0.5 -0.2 -0.1 0.0 0.4 0.2 0.2 0.1 0.3 0.4 0.5 0.2
0.2 0.2 0.2 0.4 0.3 0.4 0.5 0.4 0.6 0.6 0.5 0.5 0.3 0.3 0.3 0.2 0.2 0.3 0.3 0.7 0.6 -0.1 -0.2 0.0 0.0 0.0 -0.1 0.0 0.6 0.5 0.3 0.4 0.5 0.4 0.4 0.2
0.3 0.3 0.4 0.4 0.3 0.3 0.2 0.4 0.3 0.4 0.4 0.3 0.4 0.4 0.2 0.2 0.1 0.3 0.3 0.6 0.4 0.2 0.0 0.1 0.3 0.3 0.1 0.2 0.4 0.4 0.4 0.3 0.3 0.3 0.6 0.6
0.4 0.3 0.3 0.2 0.2 0.2 0.1 0.3 0.3 0.3 0.4 0.4 0.4 0.5 0.2 0.0 0.0 -0.1 0.0 0.4 0.4 0.3 0.0 0.1 0.3 0.3 0.2 0.2 0.3 0.1 0.3 0.3 0.4 0.4 0.4 0.5
0.1 0.2 0.2 0.2 0.3 0.3 0.3 0.2 0.2 0.0 0.2 0.4 0.5 0.6 0.4 0.3 0.1 0.2 0.0 -0.1 0.0 0.0 -0.1 -0.1 0.0 -0.1 0.0 0.0 0.1 -0.1 -0.1 0.1 0.0 -0.2 -0.1 -0.1
-0.3 0.1 0.1 0.0 0.3 0.1 0.1 0.1 0.0 0.0 0.2 0.4 0.6 0.5 0.3 0.2 0.3 0.1 0.0 -0.2 -0.2 0.0 0.0 0.0 0.1 0.0 0.1 -0.1 -0.2 0.1 -0.1 0.0 -0.1 -0.3 -0.3 -0.1
0.0 -0.1 -0.1 0.1 0.0 0.3 0.1 0.2 0.5 0.2 0.2 0.4 0.2 0.2 0.2 0.0 -0.5 0.1 0.5 0.3 0.3 0.2 -0.1 0.2 0.3 0.2 0.2 0.1 0.0 0.1 0.1 0.0 0.3 0.2 -0.1 0.1
0.7 0.2 0.0 0.1 -0.2 -0.1 -0.1 0.0 0.4 0.1 0.6 0.5 -0.1 0.0 -0.3 -0.2 0.3 0.6 0.4 0.3 0.2 0.0 0.2 0.2 0.1 0.2 0.2 0.3 0.1 0.3 0.2 0.0 0.2 0.0 0.1 0.2
0.2 0.4 0.5 0.0 -0.1 0.0 0.0 0.1 -0.2 0.3 0.3 0.4 0.2 0.0 0.0 0.1 0.2 0.1 -0.2 0.0 -0.2 0.4 0.4 0.4 0.0 0.4 0.3 0.6 0.7 1.3 0.6 0.3 -0.2 -0.2 -0.1 0.2
-0.1 0.0 0.2 0.3 0.1 0.3 -0.4 -0.1 0.0 0.2 0.3 [illegible] 0.1 0.0 0.0 -0.5 -0.4 0.0 0.0 0.0 -0.1 0.0 0.4 0.0 0.5 0.4 0.2 0.0 0.4 0.6 0.5 0.4 -0.2 0.0 -0.3 -0.2
0.0 0.2 0.2 0.3 0.5 0.0 0.0 0.4 0.4 0.6 0.5 0.4 0.2 0.1 0.5 0.0 0.2 -0.6 -1.0 -0.4 -0.6 -1.2 -0.8 -1.0 -1.7 -0.6 -0.9 -0.4 0.1 0.2

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
AUGUST 1993
NOAA-12. USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

FIGURE 28


2.1 1.8 1.9 1.8 1.9 1.8 1.9 1.8 1.6 1.8 1.8 2.1
1.9 1.8 1.7 1.9 1.9 1.7 1.8 1.6 1.8 1.9 1.8 2.0 2.1 1.7 2.0 1.9 1.9 1.9 1.8 1.9 2.1 1.9 2.0 1.9 1.8 1.9 1.9 1.9 1.9 2.1 1.9 1.8 1.9 1.9
1.3 0.9 1.0 1.1 1.3 1.5 1.8 1.9 1.7 1.6 1.7 1.9 2.0 1.7 1.7 1.7 1.6 1.4 1.3 1.3 2.2 1.4 1.6 1.7 1.7 1.7 1.8 1.8 2.1 2.1 2.0 1.8 1.9 2.0 2.1 1.7
1.5 1.2 1.5 1.4 1.2 1.4 1.8 2.0 1.7 1.9 1.8 1.7 1.9 1.9 1.7 1.6 1.0 1.0 1.1 1.3 1.4 1.7 1.6 1.7 1.7 1.9 1.8 1.7 1.7 1.9 1.8 1.4 2.1 2.2 2.0 1.7
1.9 2.0 1.7 1.4 1.0 1.2 1.7 1.6 1.6 1.8 1.9 1.7 1.7 1.7 1.6 1.4 1.3 1.3 1.2 1.3 1.3 1.4 1.5 2.1 2.2 2.3 2.1 1.9 2.1 1.8 2.1 2.2 2.4 2.4 2.5 2.0
1.4 1.0 1.1 1.0 1.0 1.2 1.7 1.3 1.4 1.1 1.7 1.6 1.9 2.2 2.0 1.6 1.2 1.3 1.6 1.0 1.1 1.6 1.9 2.2 2.4 2.9 2.7 2.7 2.5 2.0 2.0 2.0 2.1 2.2 2.4 1.7
2.1 2.2 1.8 1.4 1.4 1.3 1.5 1.9 1.9 2.1 2.4 2.1 2.3 2.4 2.1 1.9 2.1 2.3 2.6 2.5 2.7 2.4 2.6 3.1 2.6 2.8 2.5 2.8 2.5 2.2 2.4 2.3 2.5 2.4
2.6 2.0 2.0 1.5 1.4 1.5 1.6 1.7 1.7 1.9 2.0 2.0 1.9 2.1 1.8 1.7 1.8 1.7 2.2 1.9 1.8 2.2 1.9 1.9 1.8 2.3 2.2 2.4 2.2 2.5 2.8 2.6 2.0 1.9 2.3 2.3
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2.0 1.8 1.6 1.3 1.3 1.2 1.1 1.2 1.4 1.9 2.3 2.2 2.6 2.0 1.5 1.6 1.7 2.7 3.5 3.4 2.5 2.2 1.3 1.3 1.5 1.8 2.1 2.4 2.4 2.7 2.9 2.8 2.5 2.6 2.1 1.9
2.5 2.6 2.8 2.3 2.2 1.7 1.4 1.7 2.0 2.5 2.8 2.3 2.1 2.3 1.7 2.0 1.8 2.3 2.4 2.8 3.1 2.3 1.8 1.5 1.3 1.4 1.9 2.0 1.8 2.0 2.1 2.4 2.4 3.0 2.2 2.0
2.3 2.5 2.3 2.2 2.1 2.0 1.6 1.9 2.5 2.7 2.6 2.5 2.5 1.8 1.7 2.2 1.5 1.4 1.3 1.9 2.9 2.3 2.0 2.0 2.0 2.0 1.5 2.2 2.0 2.4 2.6 2.7 2.6 2.3 2.1 2.0
1.1 1.3 1.0 1.2 1.3 1.5 1.1 1.3 1.4 1.7 1.9 1.8 1.5 1.6 1.5 2.0 1.8 0.9 1.0 1.9 2.3 2.1 2.0 1.7 1.7 1.8 1.9 2.1 2.0 2.6 2.3 1.6 1.6 1.1 1.0 1.0
2.0 1.7 1.8 1.3 1.1 1.0 0.8 0.9 1.1 1.5 1.6 1.5 1.6 1.5 1.5 2.0 2.1 1.5 1.6 1.7 2.1 2.4 2.8 2.4 2.2 3.0 3.2 3.4 3.4 3.7 3.5 3.2 1.9 1.9 1.7 1.8
1.9 0.9 0.8 0.5 0.2 1.0 1.3 0.9 1.1 0.7 0.7 1.0 0.4 0.9 1.2 1.0 1.3 2.3 2.4 2.1 2.2 2.7 3.3 2.6 3.3 3.6 3.8 3.8 3.4 4.8 3.8 3.5 2.4 2.0 1.5 1.1
1.1 1.0 1.0 1.0 1.3 1.4 1.6 1.5 2.1 1.8 1.8 1.9 2.0 2.0 2.2 2.5 2.9 3.0 2.7 2.8 2.9 3.3 3.4 4.6 4.1 4.8 5.0 4.8 5.6 4.4 4.2 3.0 3.1 1.8 1.3 1.0
1.4 1.6 1.6 2.1 2.2 1.8 2.1 2.3 2.1 2.3 2.4 2.7 2.4 1.7 1.9 2.8 2.5 2.2 2.8 2.2 2.4 2.3 1.7 1.9 2.2 2.8 2.6 2.3 1.7 1.0